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THE CENTURY STUDIES IN ECONOMICS
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VALUE AND DISTRIBUTION:

SOME LEADING PRINCIPLES OF ECONOMIC SCIENCE

BY C

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PREFACE

The type of economic theory which will be found in this book is what may be called "equilibrium economics". As I understand the matter, it is consciously, deliberately, and avowedly equilibrium theory. In this respect, the theory has two characteristics:

First, it undertakes to deal with economic motivation as being analogous to the "forces" with which the so-called natural scientists deal. Human activities are explained as being the result of motivating "tendencies". These forces are conceived of either as tending toward a composition, or as tending to become constant in some sense. In either event, the result may be referred to as equilibrium—an objectively ascertainable balance among opposing forces.

In the second place, however, the concept of equilibrium as here applied is one which involves harmony, or the golden mean. In other words, the equilibrium is one which involves a logically tenable position between two extremes.

I would especially emphasize the fact that such a concept of equilibrium *of forces between* extremes, is not one of mere stability; stability may exist without equilibrium, and equilibrium may exist without stability.

Incidentally, a basis is laid for appraising the main schemes of "social planning" and collectivism.

The general procedure adopted here is one which, in my experience, has been most fruitful in the social sciences. The gist of the procedure is to unscramble inconsistent doctrines, the mixture of which, perhaps without the condition being realized by the thinker, constitutes an imperfect or false equilibrium. Such mixed doctrines, and the imperfect or false equilibria which enable one to maintain them, are broken down, generally by pushing the separate elements to their logical conclusions as extremes. (Extreme positions are at least consistent!) Then, having reduced the elements of economic

theory to their simple extreme elements, it is possible to establish a synthesis by developing a position which is free from the obvious short-comings of either extreme.

A study of the history of economic thought, which constitutes the background for the theory here developed, leads one to realize that many of the theoretical errors have arisen from extreme positions which are mixed with other positions in such a way as to neutralize them, without any real harmony or synthesis being attained.

In this connection, I desire to raise frankly a question which seems to me a fair one, namely, is it not possible to develop and state a theory of Value and Distribution, of which it can be said that the burden of proof is upon its critic? Naturally, it has been my aim to try to build up such a body of theory. With that aim in mind, I have endeavored to develop a positive theory in the line of the evolution of scientific economic thought. It is my observation that there has been a main thread in the development of economic theory, and that while the various schools of criticism come and go—proceeding first from one extreme and then the other—the main stream of thought flows on. In a sense, this main stream is “classical”, for it has form, and has developed generalizations in the way of principles or laws. The thought in this volume, therefore, is classical; but only in the sense that it undertakes to develop the laws which govern economic activity, and recognizes the reality and importance of costs. It is also Neo-Classical in a sense; but, perhaps, only in that it is based upon a concept of equilibrium between demand and supply forces.

I fully realize that one who undertakes to establish a position between extremes, is likely to find few who are in entire agreement with him. He is subject to a sort of logical cross-fire. Certainly, he will find many critics; for he will please neither extreme, nor any mere mixture of extremes. But is this situation not in itself an indication that the one chance of bringing agreement among economists is to get away from extremes? When one sets out from an extreme position, the only way one can move is toward common ground! (Or maybe this situation may be better expressed by stating that if economists are made thoroughly conscious of the extreme positions

they hold, together with the implications thereof, they can be forced to abandon those positions.)

Attention is especially called to the introductory chapter, in which a critique of current economic theory is presented. It is frankly designed to stimulate discussion, and to put the student in a receptive frame of mind with reference to any logical new ideas which may be suggested. At points throughout the book, a critical examination is made of the prevalent "price economics", the doctrine of "opportunity cost", the limitations of "marginal productivity", and the theory of "monopolistic competition". (The last is illustrated by a chapter on railway rates.) If the book succeeds in making us more aware of the short-comings of our theoretical doctrines, it may have justified its existence.

I have some hope that progress in this direction may be made, because of the fact that the history of economic thought shows great cycles in its development. At the present time, there is an excess of nationalism, romanticism, and subjectivism, which has carried many economists to extreme positions, somewhat as has been the case at various times in the past. Why, then, may we not look forward to results somewhat similar to those which have previously occurred under similar circumstances? The logical reaction from romanticism is toward classicism. Extreme nationalism may be expected to be followed by a tendency toward individualism. Extreme subjectivism calls for correction by giving due recognition to technological, psychological, and biological conditions, with due allowance for evolutionary realities. The time may not yet be ripe for a swing back from the extreme positions just referred to; but I believe that such a swing will come in due course, and it is my hope that this book may facilitate its coming.

The order of treatment is believed to have some merit. The book begins with a critique of current economics, to challenge the interest and focus it on the fundamental issues in theory. Then it examines the basic assumptions of economics, and makes the author's position clear. Next it explains the cause or genesis of value, and distinguishes economic value from other values, thus showing interrelations. Then it treats fully of the determination of value, not

only under complete competition, but also under monopolistic competition. The "value of money" is not slighted. Finally, Distribution is treated as a phase of Value. "Wages" comes first to emphasize human motivation. "Rent" comes last, as being a differential surplus. This order serves to emphasize causal relations, and avoid circularity.

Doubtless a number of mistakes will be found, probably including some lapses in logical consistency. It would be strange if, in any such effort to rear a closely knit structure, no such lapses could be found. In all modesty and sincerity, however, I desire to say that so many logical difficulties have been overcome in the course of the work, that there is reason to be confident that any such lapses can be rectified. Having wrestled with and thrown so many logical adversaries, I have gained a great confidence in the essential soundness of the approach here adopted.

Probably, too, there are aspects of the subject that have not been covered, which should be. I can only say that I have not consciously made any important omissions, and that I believe that all aspects of economic theory can be brought within the structure of the equilibrium theory here presented.

In conclusion, I desire to acknowledge gratefully the assistance received from the following persons: Professor William H. Kiekhofer of the University of Wisconsin, as editor of the series in which this work appears, has given invaluable assistance in the way of criticism. Dr. John H. Patterson, formerly of the New York University faculty, did me the great service of locking horns with me over some of the points brought out in the introductory chapter. Professor William D. Glenn, Jr., also of the New York University faculty, helped me get on the track of a sound psychology. As always, my wife has helped with proof-reading and index. Finally, I desire to acknowledge the intelligent and faithful assistance given to me throughout the work by my secretary, Miss Lorraine Erdman. Nor do I forget that a long series of patient classes in the Graduate Schools of New York University have made their contributions.

LEWIS H. HANEY.

New York City

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VALUE AND DISTRIBUTION

Chapter I

INTRODUCTION: A CRITIQUE OF CURRENT ECONOMIC THEORY¹

Why is it so common today to find that economists, as such, have little influence in public affairs, even when economic issues are paramount?

Various answers might be given to this question. One of the surest ways to the fundamental reason, however, is to inquire why there is so much disagreement among economists, not merely in superficial matters, but in their more fundamental bases of thought. Or one might well seek the answer in the reason why, 160 years after the publication of Adam Smith's *Wealth of Nations*, we still find most of the old errors and fallacies thriving in current economic thought. (There seems to be about as large a proportion of "economists" who think that expenses determine prices *and* that prices determine expenses, as there was 100 years ago; and the number of those who assert that "underconsumption" is the cause

- ¹ Cf.: O. F. Boucke, *A Critique of Economics* (1922).
G. Cassel, *On Quantitative Thinking in Economics* (1935).
J. M. Clark, *Preface to Social Economics* (1936).
F. A. Fetter, "Price Economics vs. Welfare Economics", *Amer. Econ. Rev.*, 1920; "Interest Theories, Old and New", *Amer. Econ. Rev.*, 1914.
L. M. Fraser, *Economic Thought and Language* (1937); "Economists and Their Critics", *Econ. Jr.*, June 1938.
L. H. Haney, "Social Point of View in Economics", *Q.J.E.*, 1913-14; *History of Economic Thought* (1936), Ch. I-II, pp. 581-586, Ch. XXVII; "Opportunity Cost", *Amer. Econ. Rev.*, 1912, II, 590-600; *Economics in a Nutshell*, Intro., pp. 1-20, 200-204 (1933).
P. T. Homan, "The Present Impasse", *Contemporary Economic Thought* (1928).
T. W. Hutchison, *The Significance and Basic Postulates of Economic Theory* (1938).
W. C. Mitchell, "The Prospects of Economics" in Tugwell (Ed.), *The Trend of Economics* (1924).
T. Parsons, *The Structure of Social Action* (1937).
L. Robbins, *Nature and Significance of Economic Science* (1935).
B. Wootton, *Lament for Economics* (1938).

of cyclical business depressions, is ever renewed.) Or, again, one might ask why the record made by economists in forecasting business conditions has been so poor, even in 1929, when "given conditions" could still be counted upon and ample information was available.

Surely it is significant that in 1939 we find ourselves in a stage of economic thought which is similar to the Mercantilism of the seventeenth century—mixed with a touch of the Romanticism of the eighteenth century—one of the most striking symptoms of which is the emphasis upon managed currency and easy money policies.

Indeed, an examination of the history of economic thought shows that there are no essentially new schools of economics today. Of course, the age-old cleavage as between those who believe that the individual is primary and those who believe that society is the dominant whole, of which the individual is but a subordinate part, still divides economists. There are still materialists among economists, although at the moment the idealists with their emphasis upon the ancient concept of "the good life"—and their accompanying emphasis upon "needs" and "leisure"—are mostly in the public eye. We seem no nearer today to a solution of the paradox of plenty, which attracted the attention of such thinkers as the Earl of Lauderdale, than we were in 1837. Economists still dispute the question whether their "discipline" deals with wealth or with welfare, and if the former, what is meant by the term! Now, as 100 years ago, we find Classicism opposed to Romanticism. And throughout the whole history of economic thought, there has been the struggle between those who favor a broad sociology, and those who think it both possible and desirable to distinguish a narrower field for economic science, a struggle that now finds expression in the clash between the "welfare economists" and others. As in the middle of the nineteenth century, we find some still maintaining that economic laws derived from experience by a process of deduction are valid, while others assert that there are no such laws, and that society must feel its way by a process of planless experimentation.

Economics in the 1930's was swinging wide in a reaction against subjectivism and marginal utility analysis, just as, in the 1870's,

the Austrian School swung wide in reaction against Socialism and the Historical School. First, came the revulsion against hedonism; then one against analytical psychological theory, which has gone so far as to deny the significance of marginal utility, and to assert that the causation of value cannot be explained.

This reaction went through a phase of "enterprise economics"—now fortunately waning—and more recently developed into so-called "price economics". In this last phase, it has played a leading part, along with Institutionalism, in dealing with post-war social emergencies, in which connection its naïve assumption of the value of money, and assertion of the potency of artificially maintained "easy money", have implemented the "planned economy" schemes of various political leaders.

I. THE FUNDAMENTAL WEAKNESS OF CURRENT ECONOMIC THEORY

One must finally reach the conclusion that much of the weakness of economics lies in a lack of agreement as to the fundamental data with which the social scientist has to deal. These are the nature of man, the individual; of society, the group; and of the environment, physical and institutional.

Then there are the phenomena of interrelation, or action and reaction, between or among these fundamental data. Upon our understanding of these fundamental things depends our judgment as to the nature and scope of economics, and our solution of its problems.

TWO GREAT DUALITIES

Thus we come to the two great dualities: (1) mind and matter,² and (2) the individual and society. These dualities may be otherwise formulated as (1) man and his physical environment, and (2) man and his social environment. Differences of opinion concerning the nature and relative importance of the members of these two

² Even if so-called mind be regarded as a mere manifestation of matter, the significance of this particular "manifestation" may be questioned by some, and be emphasized by others.

pairs, are the immediate source of all fundamental disagreement in the social sciences.

And as we reflect how idealistic or materialistic presumptions, or a leaning toward individualism or societism, affect economic thought, we soon realize that the greatest problem of all lies in the fact of difference—differences among men, and differences in environment. Very close to ultimate, is the problem presented by such differences, and so divergent are the solutions adopted in economics that no hope of agreement can exist until the weight of decisive experience falls on one side or the other.

Some, like the Classical economists, assume that individuals are born equal, but become different because of environmental conditions. Others, like the Socialists, assume that they are born different, but may become equal by education and common social institutions. Still others, like the Romanticists, say that not only are individuals different at birth, but also that it is impossible to make them the same, on which assumptions they base the conclusion that men must be “articulated” and regimented, in order to make them function as parts of a whole. This conclusion presupposes that differences among individuals may be ignored, and that organization and cooperation can be assured by means of central authority.

Finally, the equilibrium economist will tend to hold both that some differences and that some likenesses exist at birth. (Or they may say that *some* individuals are born different and others equal.) At the same time, they will hold both that some differences can be eliminated or minimized, and that others cannot.

No economist who has not consciously adopted some consistent attitude toward this problem can expect to understand economics as a social science. And if one recognizes and understands the problem, but refuses to deal with it, one is forced to go to such lengths in abstraction that his economics can apply only to an unreal world.

Uniformities there must be in any scientific thought. The only true uniformity, however, must come out of difference. This is as true of economic value as it is of beauty, goodness, or truth in general.

It is much the same with the thinker's attitude toward the physical environment—material objects. If he denies the reality or importance of difference among objects as to degree of scarcity, mobility, nearness in time, functional relation to human desires, and the like, the economist may do one of two things: he may conclude that land and capital are the same, and that labor and enterprise are one; or he may turn agnostic and assert that technological conditions need not be considered in economics. In either case, "heroic abstraction" is the result—unreal uniformities are attained by the easy way, "let it be assumed."

Thus the Institutionalist may say that there is no economic science, because his understanding of the fundamental data leads him to the conclusion that there is no equilibrium or "normal" adjustment—that economic life is governed by man-made institutions. Since the welfare economist does not believe it to be possible or expedient to consider man or society in a single aspect, such as economic value, he says that, if there be a science of economics, it must include ethics and perhaps politics. On the other hand, the mathematical economist refuses to go into any study of the nature of man, but takes the results of human choices for granted. He thus not only fails to deal with motivation or causes, but also treats social phenomena and human valuations as if they were mathematical quantities, any one of which can be varied without affecting any other.

Since 1914, to an increasing extent, economists have become divided into ill-defined groups, each of which is characterized by its peculiar kind of abstract assumption and terminology. These groups live in unreal worlds of thought. They do not make much effort to understand one another; but spend much of their time in revising their own unreal assumptions, or eliminating the realities of life, so that they may attain a logically accurate system of deductions. Some assume continuous change of a sort that makes generalization impossible. Some assume the existence of goods, and thus a sort of stationary state (F. H. Knight). Among these, some assume utility, and some scarcity, without recognizing that the two concepts are interdependent! Some "eliminate" all technological consideration.

Others "avoid" ethical contacts. A few assume that work or "employment" of any sort is an absolute good, to be gained at any cost, and make the efficiency of capital depend upon its effect (more or less assumed) upon employment (Keynes). Some assume that money has value because it is money (Cassel).

The point is that these abstract assumptions, often impossible in reality, not only cause unreal systems of economics, but also cause impossible divisions among economists who talk in different terms and proceed from postulates which are concealed or not fully revealed.

THE PHILOSOPHICAL BACKGROUND

It seems reasonably certain that as long as all this lack of agreement as to fundamentals exists, economics will remain a house divided against itself. If this condition is to be rectified, economics must deal with the fundamentals. But to this end, economists must be able to understand these disagreements and to appraise their importance. The Institutionalist and the welfare economist, for example, are apt to have some fairly profound ideas about psychology, ethics, and politics. They must be met on their own grounds in these matters. The mathematical economist and the "price economist" may be invincible if met on their own abstract grounds; but once one understands the true nature of man and society, one can detect the unreal and impossible assumptions they make. All thinkers in the field of social science have their philosophies and psychologies. Unless they harmonize these when they clash, and seek to understand the differences among themselves, they cannot work upon a common ground or reach conclusions that can be reconciled.

Nor is this suggestion to be negatived by pointing out that some economists may not be aware that they have a philosophy or a psychology. This point but emphasizes the importance of the suggestion here made. If they can be made more conscious of the philosophy which underlies their thought, will their economics not be more consistent? Probably all economists should be educated in philosophy and psychology sufficiently to *understand the funda-*

mental significance of the divergencies which characterize the doctrines of the various schools of economic thought.

It is not without importance to note that economics as a would-be science came into existence somewhat as follows: First, economic thought had to be sufficiently separated from ethics and politics to give it distinctness and a characteristic field, such as it could hardly have had in ancient Greek thought or in Medieval times. The way being thus clear, there came in due course the idea of "science". Developing first in connection with physical phenomena, this idea led to the concept of uniform tendencies which could be described as cause-and-effect relationships, subject to measurement. In short, the concept of scientific law developed. Next came a number of developments which made man and society susceptible to treatment as "data", in somewhat the same way that physical phenomena are treated. For example, thinkers came to regard the individual as having "rights", instead of regarding him as being merely subject to authority and duties. As a result, it became possible to conceive of society as existing for the individual. Accordingly, the individual's wants or desires became of greater moment, so that it seemed more reasonable to regard them as tests of the importance of goods, or economic values.

Finally, there developed fairly mature theories as to the motives which actuate individuals, and in the midst of much discussion of the reasoning "faculty", moral sense", "self-interest", "sympathy", or "propensity to truck and barter", economics was born. Only by this chain of developments, it seems, could there have evolved a science which depends upon the validity or importance of objective exchange values under competition.

In fact, *economics was born of philosophy*. Adam Smith, sometimes called "the father of political economy", was a professor of moral philosophy. Later, John Stuart Mill, restater of Ricardian doctrine, likewise was primarily a philosopher.³ In short, Classical economics became what it was, largely because of the philosophy which underlay the thought of the Classical economists; and that

³ To these cases may be added the fact that Alfred Marshall and Henry Sidgwick, who were so influential in neo-Classical economics, were also philosophers.

philosophy was predominantly materialistic. Hence the strong tendencies toward both individualism and *laissez faire*. And today, each economist who comes to grips with the fundamental problems, consciously or unconsciously has a philosophy, or a mixture of philosophies, which shapes his thought. It may be that what is now needed is a closer working relation with philosophy, so that economics can be reborn!

Unfortunately, there is too often a lack of interest in these matters. Many an economist presents the alibi that it is not his business as an economist to understand philosophy, ethics, or psychology. But the very basis of economics lies in human motivation, and hence all economic thought rests upon assumptions as to the nature of the individual man. The economist, as such, need not be a philosopher or a psychologist. He must, however, understand philosophy and psychology sufficiently to use the conclusions of philosophers and psychologists as an aid in attaining fundamental consistency in his point of view and classification of phenomena.

THE NATURE OF MAN; MOTIVATION

When one looks back and considers the different notions that have obtained among economists as to the nature of man, the differences in their economic thought are not surprising. Some have considered man as a "political animal". Some say that man is a creature of "instinct"; others assume that he is dominated by a "faculty" called reason. Many have thought of man as filled with self-interest; while others have conceived of him as a benevolent being. It is hard to say whether a majority of economists in the past have thought men to be inherently and inevitably different in their capacities, or whether they have considered them to be so perfectible that differences at birth can be overcome by education and training. Do men desire pleasure, or are they born with elementary tendencies (desires) toward some things and away from others, which incidentally may make certain acts pleasurable? Is there such a thing as an average man? Even in these days, when men are thought of by the behaviorists as being just another sort of animal, we still find traces of the "economic man" of the early nineteenth century.

Surely it is hardly necessary to point the moral. The concept of an economic man may serve a useful purpose in aiding scientific abstract thought. The danger is that the thinker will be led to ignore the technological factor which lies in individual "nervous systems", temperaments, and personal characteristics. Ignoring such factors, leads to the cardinal error of ignoring the differences among individuals. The subjective values of the individual and even the way in which he gets his living, may be more dependent upon what sort of a person he is, than *vice versa*.

Some economists assume, however, that they do not need to know anything about such matters. (These are either the mathematical economists or the statistical wing of the Institutionalists, or the behaviorists.) Still other economists, while recognizing the desirability of knowing something of the nature of man, are deeply divided in their understanding of what they find when they study him. In other cases, they divide on the question as to whether it is possible to dissect "human values" and study economics apart from ethics, politics, religion, etc.

For example, almost from the beginning of economic thought, there have been two tendencies, one emphasizing "reason", the other "instinct". Those who emphasize reason are apt to set up a sort of "economic man", who acts intelligently and with due reflection. Thus we find a tendency among those who accept either "enterprise economics" or "price economics" to put motivation on the basis of "opportunity cost". This assumes a sort of "economic man" who sees opportunities, knows them when he sees them, and acts upon them promptly—a highly reasonable and mobile student of prices. Such thinkers have frequently fallen into an acceptance of the psychology of hedonism by assuming that in fact men desire pleasure.⁴ Some have even gone on to accept the ethical implications of hedonism, namely, that that which is desired is good, and therefore is right. But not all thinkers who emphasize the part that reason plays in human motivation are of the foregoing

⁴ Bentham's thought was that the will or emotions refer sensations to the faculty of reason; reason decides where the maximum net pleasure lies; then action follows.

sort. Some accept a volitional psychology, and assume something in the nature of freedom of the will. They are led to idealistic schemes of social control, as a means of directing the reasonable, and therefore more or less godlike, individuals who compose society—whether the main “objective” be economic or ethical, or “the good life”. The so-called welfare economics may be led to this extreme.

On the other hand, there have always been those who think of man as dominated by a few “instincts” and organic wants. Sometimes such thinkers are apt to assume either some “moral sense” or some unseen hand or divine will as taking care of the race. They may, however, rely upon evolution, on the question-begging assumption that it is always the “unfit” who are eliminated by evolutionary processes, and that those who survive are “fit” and therefore “good”.

Many of the assumptions which have been made by economists, as briefly outlined above, hinder or prevent causal analysis. Many economists, because or with the aid of certain presumptions as to the nature of man and society, have been led to deal with symptoms or results, instead of causes. If the economist holds that the nature of man is either unknowable, or so indeterminate that it cannot be counted upon as a constant, he is apt to take the phenomena of social economic life as he observes them, without any attempt to understand their causation. He has no basis for assuming that there are “forces”, in the sense of “drives”, urges, desires, motives, or purposes. Thus, he has no basis for assuming that there is any equilibrium, that is, a balance between opposing forces.⁵ Consequently, he is in no position to attempt to formulate laws, and therefore he can hope for no economic science.

Unfortunately, it is all too common to find that even when the concept of equilibrium among forces is accepted, there is also an acceptance of the idea of mutual determination. For example, there is the illustration of the three balls in the bowl. We are told that the balls mutually determine their several positions, and that in a

⁵ Concerning the concept of equilibrium cf. A. Marshall, *Principles of Economics*, Bk. V, Chaps. I-III.

similar way prices determine one another. This sort of allegory, however, is no better economics than it is physics. Surely no physicist would undertake to explain the position of the balls in the bowl without referring to so-called forces such as gravity and inertia. The science of physics requires that such matters be explained in terms of a measurable relation between bodies, which relation is not to be taken for granted. Just so, there never can be any real science of economics which assumes a price in order to explain a price.

It is important to note that there are two sorts of economists who accept the "mutual determination" idea: (1) Those who, like Marshall, use it as a mere illustration, or to cover up some crude entrepreneur economics of the sort that "explains" high prices by high wages; (2) those who abandon the attempt to deal with causes. Thus the "price economists" wish to leave technological and psychological conditions or "forces" out of consideration, and accordingly, do not worry about the surface of the table, the bowl and its shape, the number and elasticity of the balls, or the way in which the balls are put into the bowl. These are all "assumed"—some as "unknowns" and others as unknowables!

But surely enough has been said to state and illustrate the point. It may be that an understanding of philosophy, in the ordinary sense of the term, is not the only basis for establishing a mutual understanding as to the fundamentals of social science. It is the author's opinion, however, that the wisest and most expedient course is to use the rich and significant terminology of philosophy, together with the mass of acute and important analyses and classifications which centuries of philosophers of all races and nations have made available to us. We must look for the answer especially in the field of ontology and epistemology, as these bear upon (1) the nature of man, (2) the relation of one man to another, (3) the relation between man and his physical environment, and (4) the validity and limitations of knowledge as the basis for so-called laws.

It seems doubtful that without philosophy we can understand psychology.

MATERIALISM VS. IDEALISM

A study of the history of economic thought leads to the conclusion that the distinction between materialism and idealism is one which is most important for economists to understand. Along with this distinction, goes a closely related one between empiricism and rationalism. Most thinkers have a bias towards one or the other of these philosophies or epistemologies. The thought of the Classical economists was characteristically materialistic, and was much influenced by empiricism. These tendencies were doubtless emphasized by the reaction against the idealism of radical thinkers and against the rationalism of the Physiocrats. Today, there exists much highly idealistic thought concerning the economic problems of the nation, coupled with the related tendency toward rationalism, as illustrated by the rejection of laws based upon experience and the insistence upon experimentation that is essentially planless.

The way in which these underlying thought tendencies swing from one extreme to another suggests as a reasonable hypothesis the conclusion that the truth may lie in a balance between them. Indeed, it seems logical to conclude that any social science based upon the concept of an equilibrium of forces, must accept some sort of a dualistic philosophy; since the "forces" must be regarded as real, and must include both human desires and external conditions.

These suggestions are made here merely to lend point to some criticism of specific economic doctrines. For example, there is the point that the fundamental weakness in Marxian socialism lies in its attempt to base an idealistic concept of social organization,—in which values would be determined by the "socially necessary labor time",—upon a materialistic interpretation of history and a materialistic labor cost theory of value.⁶ Here lies fundamental inconsistency.

Again, the Austrian School of subjective economists sought at first to base economic value upon a concept of marginal utility which seems to imply idealism. At the same time, however, they

⁶ See L. H. Haney, *History of Economic Thought*, pp. 495, 498-500.

assumed that "goods" in the shape of material objects present themselves to the individual and virtually dictate to him what he shall desire—a distinctly materialistic concept. These opposite ideas they did not synthesize.

It is not difficult to find today economists who hold a highly idealistic theory of so-called "social value", in which the existence of a social organism is accepted as a reality; while at the same time, they analyze Distribution in terms of the expenses of individual business enterprisers (Seager). And again, we find the same tendency to accept an idealistic concept of the social organism, mixed with the individual business enterpriser's concept of capital as a fund of values (J. B. Clark).

The very nature and scope of economic law depends upon one's position with relation to the underlying philosophies of life. If one be an idealist, one will either deny the existence of economic law, or hold it to depend upon spiritual uniformities. Or the idealist may limit the scope of economic law to Production, as opposed to Distribution, as did J. S. Mill. He will hesitate to assume any given conditions as the basis for positive laws. He will readily accept planning and experimentation without regard to experience.

On the other hand, if the economist be a materialist, he will regard the individual as being ruled by the natural forces of his environment. He will regard laws based upon the limitations of environment as being exact and absolute. He will tend to conclude that there is little that man can do to control economic life, and accordingly that government should adopt a policy of *laissez faire*. In America, at least, few economists can now be found who go to such extremes. The main expression of this tendency is found in the more or less tacit adoption by some of a premise to the effect that government should interfere with business only in a negative way, to remove abuses.⁷

One does not have to go back to the Physiocrats or Adam Smith to find evidences of the effect of such philosophical premises upon economic thought. The welfare economists of today are influenced

⁷ Perhaps the thought of Professor T. N. Carver and Professor F. W. Taussig has, at times, *leaned* in this direction.

by an aggressive idealistic philosophy. The current tendency to emphasize consumption as a "means" toward securing a better life, and regarding "needs" as a function of "activities", is an ear-mark of idealistic philosophy. In this case, production becomes an "end", and the tendency is to regard it as an "activity" which may have its chief importance as a form of self-expression.

On the other hand, those who today treat production solely as a means of securing goods which men want, and regard it as existing solely because of a recognition of its effectiveness in this sense, are likely to lean toward materialism. To them, consumption is the only end to which production contributes as the "means". They do not regard production as a desirable activity, but as a cost, in the sense of disutility or pain. Such was the doctrine of the Classical economists.

Closely related to production and consumption, is the concept of "wealth", which is one of the fundamental terms used in economics; and the definition of this term that is adopted by the economist, tends to be one which is in accord with his philosophy. Obviously, there can be many different attitudes towards goods, for, while they exist as an objective fact, they may be regarded from different points of view. To the observer who emphasizes ethics, the criterion of wealth includes a test of goodness or badness. To the one interested in politics, wealth may include anything which furthers order and security within the state, or the power of the state in relation to other states. Thus one who seeks the ideal of the good life is likely to include in the concept of wealth anything which he thinks contributes to such a life, without regard to the possibility of any objective test or measurement. Idealists have proceeded in this way, from Plato down to the present time.

An excellent illustration of the importance to the economist of an understanding of psychology, is found in the current treatment of the concept of utility. Probably a majority of economists regard utility as "want gratification". A good many thinkers, however, describe utility as a "feeling" of the worth of an object, arising from the want of it. The first definition makes utility a matter of pleasurable sensations and implies a "sensationalist" psychology; while at

the same time, it is usually found leading to statements which suggest that utility is inherent in the object. The second definition, however, makes utility depend upon an "attitude" of some human individual toward an object, and avoids any suggestion of intrinsic value. In between, lies the possibility of regarding utility as a mere potential relation between an individual and objects in his environment—one which may develop into an "urge" or "drive" in the individual toward the object. This would assume neither intrinsic utility nor intrinsic "mind".

The most important theoretical point in this distinction, lies in the difference in the definition of marginal utility to which it leads. Those who regard utility as a matter of pleasurable sensation, logically define marginal utility as the utility of the *last unit* "enjoyed", usually determined by a process of actual consumption as in eating apples. Those, however, who define it as a feeling of want, tend to define marginal utility as the utility of an *additional unit*. They define marginal utility as the intensity of a feeling of desire for an object, and this necessarily finds expression in the individual's attitude toward another unit as an addition to his stock.

Obviously, too, the want-gratification idea of utility fits in with hedonistic psychology. It will be found that the thought of few economists who treat utility in this sense is free from hedonism, psychological or ethical, or both. Accordingly, they are unable to deal adequately with questions concerning human motivation.

How many economists realize the full meaning and importance of their definitions of utility?

MEANING AND SIGNIFICANCE OF THE SOCIAL POINT OF VIEW

One of the ways in which economists differ in their thinking, and which has a decided bearing upon their theories, lies in their point of view as regards society and the individual. Elsewhere, the author has discussed this point at some length.⁸ Therefore, without going over the ground again, he will merely emphasize here the

⁸ See "The Social Point of View in Economics," *Q.J.E.*, November, 1913, pp. 115-139; February, 1914, pp. 292-321.

relation of the concept of society to idealism, and present some concise criticisms of the more extreme doctrines related thereto.

Societism, or the belief that society is primary and that the individual exists for it, is logically associated with idealism.⁹ Idealists have difficulty in explaining the uniformities in phenomena as these are seen by different individuals. If each individual be different, and if each be a law unto himself, the question arises, how can one count upon uniformities in the world outside, or explain them when they are observed? To the idealist, it seems that an answer is most readily found by introducing the concept of a society which dominates individuals, and which therefore enables the thinker to minimize the differences among them. Moreover, such a concept of society enables the thinker to regard man as being so organized or articulated that collectively he can overcome the limitations of his environment. Thus he can realize his ideals. The idealist, therefore, regards society as being based upon common ideals. At least, society, as he conceives it, gives the leader power to enforce his ideals. He emphasizes the duties of individuals, not their rights. The existence of various norms or standards is assumed, after the fashion of rationalism.

It is in accord with such an idealistic approach that J. B. Clark, Seager, Seligman, B. M. Anderson, and C. H. Cooley developed their concept of an organismic society. In many respects similar, is the thought of such European economists as Adam Müller in the last century, and Othmar Spann today, although we characterize their thought as romantic nationalism.

On the other hand, materialists have difficulty in explaining the uniformities that are found among *men*, since at most they attach only secondary importance to ideals or spiritual considerations. They find men, as they mature, becoming hopelessly different in strength, intelligence, and many other respects. They therefore regard society as based upon the differences among individuals—differences in capacities and interests. These differences lead to a realization of the advantages of division of labor and exchange. These advantages, however, are thought of as being recognized by

⁹ See Haney, *History of Economic Thought*, pp. 9-12 (3rd ed.).

independent individuals, actuated only by self-interest. "Rights" are emphasized; not duties. There is no assumption of norms or standards, the only test being the empirical one.

Accordingly, we find extreme individualism going along with extreme materialism in the history of economic thought. It is characterized by the social contract theory of the state, and the idea of society as being an association of convenience. The Classical economics was based upon such a point of view. So is the entrepreneur economics, which has so widely influenced American economists, notably H. J. Davenport.¹⁰

The point is that all this is not just a question of the way one feels about it. One does not have to assume that no one can know the truth about the nature of the individual and of society. The plain fact is that one must make some assumption in these respects, and one's economic thought must be influenced by whatever assumption one makes. The best procedure, therefore, is to make a serious effort, each for himself, to arrive at an understanding of the true relationship between individuals and society.

The truth about the matter seems to lie in the understanding of extremes and the golden mean—in a synthesis of divergent extremes so as to attain a position where the social scientist can think of the many individuals in the one society, and the one society in the many individuals—both at the same time. There is no question of extreme individualism or extreme societism being morally or ethically wrong. There is, however, a question, and a very important one, about their being scientifically true and in accord with observed realities of life.

To illustrate the point, the divergent views with reference to the economist's concept of wealth may be considered. (While the wealth concept may not be essential in economic theory, income being more important, wealth has its significance as a source of income.) If one be a societist, one will desire to include in the concept of wealth, so-called "public wealth", embracing non-transferable items which can be appraised only from the standpoint of the state. Also

¹⁰ Davenport may not have been at bottom a materialist. Few such typical Americans are. But he could not throw off the Ricardian influence.

one will include intangibles and ideal objects, perhaps even going so far as to bring in culture and the laws of a nation. On the other hand, if one be an extreme individualist, one will want to include in wealth those things which are valued only by individuals, and which disappear when individuals are regarded as a group. For example, we find some individualistic economists desiring to include mere individual claims to wealth, such as mortgages, bonds, and the like; and some would even go so far as to include predatory instruments, typified by the burglar's jimmy.

The real tests of wealth, however, enable us to arrive at a synthesis of these extreme views. These tests seem reducible to two: motivation and measurability.

On the score of motivation, the scarce goods must be goods which are desired by all normal members of the group, or which may be so desired, and the consumption of which will not tend to destroy the society. The extreme individualist, however, sees the individual, as it were, as a lonely individual! To such an isolated individual, anything that would further his *separate* interests, may seem to be wealth. He is thought of as set apart from his fellows and acting without regard to their interests—perhaps consciously, perhaps not. The trouble with this position, however, is that it cannot be generalized. Worse than that, it is self-destroying. Such lonely individuals are not normal; they are not real. The real individual can be motivated only by much the same things that motivate his fellows.

So it is when one applies the test of measurability: The only way to measure wealth objectively is through exchange; but lonely individuals do not exchange. And individuals who have anti-social tendencies do not so act as to balance utilities. Consequently, economic transactions could not exist, and there could be no assumption of commensurability.

Now, if one takes the other extreme, one finds that the individual is not lonely, but that he is lost—lost in a social organism for which he is assumed to exist. Society being thus set over the individual, non-individual motives must be appealed to, including such as altruism. This procedure is not only impracticable, but is incon-

sistent in that it appeals to individuals who are supposed to be so subordinated that we may think of them as being lost. According to this extreme, society is regarded as a totality or a unit, so that free exchange between individuals cannot exist. Wealth, therefore, is not necessarily exchangeable, and consequently is often not measurable. Personal qualities and things considered on some ill-defined basis of general usefulness to society are taken into the concept. Moreover, since exchangeability and measurability are not required, the societistic thinker usually introduces an ethical element of appraisal, considering wealth from the standpoint of right or well-being.

Closely related to the concept of wealth, is the concept of value. Here, too, we find the same differences in thought, based upon differences in point of view or underlying philosophy. To begin with, both groups of thinkers who occupy extreme positions, the individualists and the societists, take the existence of value for granted. Their assumptions as to the nature of society prevent them from explaining value, and therefore they find themselves unable to treat the subject scientifically—that is, from the standpoint of causation. Their “escape” is to assume that the quality of value has somehow or other become attached to goods which they find in markets.

At the one extreme, those who hold that society is an organism cannot consider voluntary and self-initiated exchanges among individuals, and as a result, they think of value—really “utility”—as existing apart from and prior to exchange. In this sense, value appears to them to be an absolute quality. They fail to see that individuals are concerned in the valuation process, and that they must be motivated as individuals in order that exchanges may occur; thus they do not see that the *relative* importance of the things exchanged is the deciding factor.

On the other hand, the extreme individualistic thinker centers his attention upon the relations existing among independent individuals who exchange freely, and as a result, he deals primarily with exchange values—really “prices”—which he considers as mere ratios between or among goods. The causation and determination of these

ratios, he takes for granted. He fails to see that real individuals are social individuals, and that they are affected to a considerable extent by their interdependences as exchangers and exchangees. Their feelings and desires are somewhat molded by common experiences and customs.

To put the matter a little differently, the extreme societist sees one great social unit as dominating the valuation process through authority or through an unreal assumption of identity between individuals and society. Thus values to him are absolute—really mere utilities—and are not expressed in objective exchange ratios. To an individual who is conceived of as a unit in an articulated or organic society, "social value" (some authority's idea of what will contribute to the good life) determines "individual value". On the other hand, the extreme individualist begins with an assumption that individuals are independent and virtually unrelated, the individual appearing as a non-social atom, acting freely and higgling with other individual atoms according to the force of self-interest. He does not appreciate the reciprocity of exchange, or the fact that both parties to an exchange must normally gain if the process is to be continued. Consequently, he finds it impossible to get at the causation of value. "To the lonely individual, as to the member of an organic society, values (as expressed in prices) appear to be fixed facts, with no relation to his own subjective states of consciousness, whether of utility or sacrifice. His subjective values appear to cut no figure in the situation. He merely buys or sells different physical quantities of this or that material, according as 'the market' registers a low or high value. Values are *merely* relative¹¹ for the interrelations of causal forces are unseen. Exchange seems to be an ultimate thing."¹²

These two extreme approaches to value theory can be well illustrated by considering the way they affect economists today as to the

¹¹ By "merely relative" I mean the idea of a ratio between goods regarded as mathematical quantities. According to this idea, the subjective values of the goods to the individual buyers and sellers are not considered as independent variables upon which the exchange ratio depends.

¹² Haney, "The Social Point of View in Economics," *Q.J.E.*, February 1914, p. 301.

meaning of the terms, "demand" and "supply". For example, the extreme individualist always thinks of demand and supply as consisting of quantities—the quantities bought and sold at a given price. He sees that individuals buy quantities at the going market prices. He sees that other individuals sell quantities at the same prices. Taking the existence of value for granted, and assuming that prices either are values or express values, he proceeds to reason that demand and supply *as quantities*, depend upon price, thus inverting the theory of value. His concept of society and of the individual's relation thereto is so inadequate that he fails to see that the price is determined at the point of intersection between two schedules of subjective valuations, the schedule of buyers' bids and the schedule of sellers' offers. In real life, buyers and sellers are social individuals, and their valuations and actions are all more or less interrelated and interdependent. The addition of individual buyers and sellers at any point in the demand and supply schedules affects the whole situation. He does not see that these schedules are independent of price, or objective value, and *exist before any price or objective value can be determined*. Such a failure leads to a concept of demand and supply that is possible only in the mind of one who—whether consciously or not—regards economics as dealing with the problems of an individual business man.

It should be emphasized most emphatically that economics is related to economic life, and not to some particular form of economy. Regardless of competition and individual initiative, the theory of Value and Distribution is important. Economic science must assume, as known data, the existence of different individuals and of their desires and costs. This is true of any economy, Communist, Fascist, or Capitalist. For example, as a matter of practical life, does the dictator not desire to make most of his subjects as satisfied as possible? (If he does not so desire, is he not forced in that direction by fear of a revolution?) Then he may well analyze the relation of means to ends, and in doing so he will necessarily make use of much of the analysis of equilibrium (anti-revolution) which economic science accepts. Thus he could hardly get away from a consideration of the utilities and the disutility costs of individuals.

CONCRETE ERRORS IN ECONOMIC THEORY

Perhaps the foregoing treatment of the common errors in economics that arise out of one-sided or mixed philosophies will seem too general and abstract to convince some readers. It will be well, therefore, to examine specifically some of the doctrines or theories which characterize the accepted economics of the day.

The main errors may be classified and dealt with as arising out of (A) "false separatism", (B) "false articulation", and (C) uncorrelated value and utility.

A. False Separatism

By the preceding term, is meant the failure to see the interrelation that exists among the parts of a whole. The attempt to treat such parts as if they were independent, leads to what is meant by false separatism. It may be called atomism, and be described as mechanistic. Much of this vitiated the theories of the older Classical economists.

1. The Entrepreneur Point of View

Probably most of the more common errors in particular economic theories come under this head. In America, at least, most of the inconsistencies in economic thought are due to remnants of Classical individualism, or to the adoption of the business man's point of view—which comes to much the same thing.

In detail, some of the more common errors of this sort are as follows:

(1) In a majority of our economic textbooks, we find that the *existence of value is assumed* or taken for granted. Moreover, either *the concept of price is not separated from the concept of value*, or prices also are assumed and taken for granted. Then value is defined as a ratio, and demand and supply are defined as being the quantities of goods that are or will be bought and sold, respectively, at a given price.

Thus there is no attempt really to explain how values are caused. It is therefore impossible to explain how they are determined. It is

impossible to use economic theory as a basis for predicting what values will be in any future time. The futility of saying that demand and supply determine value, but that value also determines demand and supply, is one result. The "equation of exchange" is another. Aside from the fact that it is not an equation, but a statement of identity between two sums, the basic futility of the mathematical concept of an equation of exchange lies in its failure to recognize that it assumes not only that some value existed in the currency unit, but also that this value will vary in proportion to physical quantities of goods or currency, without relation to the demand, or the psychology of buyers or sellers.¹³

A mixture of idealism with some command of the technique of mathematics or statistics, leads not a few economists to take the value quality for granted, and thus to defend so-called managed currency and fiat currency. If one refuses to worry about the possibility that currency may lose the quality of value, one readily proceeds to think that changes in physical quantities of currency may control price levels. And if one is used to dealing with figures, one readily accepts price averages as covering the differences among individual goods, and allows long-term trends to serve in lieu of normal equilibria.

Still another illustration of the assumption of value or prices, after the fashion of the individual business man, is the doctrine of *opportunity cost*. This will be discussed in more detail in subsequent chapters. Here it is merely observed that the concept of opportunity cost assumes the prior existence of values or prices. The author has yet to find any statement of the doctrine which does not beg the question of the determination of price, for always the alternative lies between the attractiveness of two lines of action which depend upon how much money one gets, or how much money one has to pay, or upon the difference between those two sums.

Opportunity-cost economics is an attempt to evade the problem of equilibrium by adjustment. By assuming the prices of the factors of production, merely going through a superficial process of "im-

¹³ Cf. below, p. 413

putation", the marginal-productivity theory is made to seem plausible.

As Davenport and his followers have recognized, the acceptance of opportunity cost would give economics no ground for rejecting acquisitive or predatory activities.

(2) The entrepreneur or individual business man always thinks of *cost in terms of the expenditures in his business*. It is therefore in strict accord with business that economists so commonly speak of costs in the same way. This practice not only leads to circularity in reasoning, since expenses are obviously prices, and therefore cannot logically be set up as the basis for determining prices; but also it leads to erroneous theory based on the assumption that expenses are fundamental or represent fundamental economic forces. Most economists recognize that disutility cost, in the sense of aversions or dissatisfactions overcome by producers, is an important concept. They recognize that psychic costs are an offset against psychic income, and that these are, in a real sense, the ultimate elements in economic life. Nothing but confusion, therefore, can come by substituting expenses for disutilities or real costs. Would anyone substitute "price" for "utility"?

Much of the valid criticism of current economic theory arises from the fact that there is no necessary equivalence between the irksomeness of labor and the wage paid to the laborer, the former being disutility cost, the latter expense cost. The problem that lies in the assumption of the equivalence of expenses and costs has not been adequately dealt with, and it never will be so dealt with as long as economists so blithely slip from one use of the term to the other.

The conclusion seems to be that value theory will remain unsatisfactory as long as expense costs are considered a basis for value; and economics as a social science will be fatally hampered as long as it is unable to digest the concept of disutility cost or real cost.¹⁴

(3) Closely related to the trouble with "expenses", is the preva-

¹⁴ Utility and disutility, so it seems, can not be measured; but abstractly considered they are homogeneous and theoretically commensurable. Indeed, they are in some way composed in the subjective prices which are expressed as bids and offers of prospective buyers and sellers.

lence of the *treatment of Distribution in terms of "payments" made* to the several factors of production. Probably a majority of American treatises on economics deal with what may be called contractual shares; that is, they deal with wages as a price paid for labor, and with rent as a price paid for the use of land. In some cases, the theory is so attenuated that in lieu of *explaining* wages the student is asked to look around and see what wages are paid, the impression being given that this is all he can do about it. This procedure, however, results in taking for granted whatever is. No explanation is attempted. Productivity is taken for granted. Surely, science goes out of the window when the scientist is unable to answer the question, Why the "wages paid" are what they are. What value has economics as a science, if it cannot answer the question, How are wages determined?

It is no answer to the latter question to say either that wages are determined by bargaining, or that they are determined by demand and supply. Bargaining is merely a process of negotiating an agreement, and it carries no implications as to the forces which motivate the bargainers or determine the outcome. One does not refer to a bargaining theory of prices. Nor does one hold a labor-organization theory of wages, or a cash-reserve theory, although these conditions are important elements in the bargaining power of labor. Similarly, the demand-and-supply formula does little beyond raising the questions, What determines "demand"? What determines "supply"? How are the two equilibrated? If these words throw any light on a theory of wages, it is apt to be an implication that they assume a tacit acceptance of the existing conditions as ultimate phenomena. They may even indicate an acceptance of them as being "right"!

In this connection, it should further be observed that the futility of treating the shares in Distribution as being contractual payments is clearly emphasized by the fact that in all cases one finds in the world of reality that much of the service concerned is rendered without contractual arrangements. Thus much labor is performed without the "payment" of wages therefor. Many farmers, for example, work for themselves, as we say. How then can wages be described as payments made for labor?

Does not economics stultify itself when it so defines its terms that economic theory is estopped from dealing with conditions in a socialist state?

(4) The common practice in economics, in America at least, is to "*impute*" a price to those disutility costs which are borne by the enterpriser himself. For example, the labor performed by the enterpriser is assigned a price, and this price is sometimes called "imputed wages". So it is with the entrepreneur's own capital as used in his business. The doctrine of opportunity cost is invoked as the basis for imputing interest on such capital, on the hypothesis that if the enterpriser had invested it in some other business, it would have earned some interest. But "some interest" is a very different matter from the imputation of a definite price for the use of the said capital. The whole situation in this respect is confused, confusing, and unsatisfactory. Economists will have to face the matter more squarely than they have yet done, with the idea of dealing completely with the realities of human motivation as it affects the functioning of the several agents of production.

(5) At several points already, the logic of the discussion has pointed to the *marginal-productivity theory* and the notion that the margin depends upon the prices that an enterpriser has to pay for the other factors of production. This idea, in various forms, will be found scattered throughout economic thought from Ricardo's time to the present, and despite much criticism in isolated cases, seems to hold its own rather extensively. In its extreme form, it is but another case of introducing the business man's individualistic point of view, and allowing it to play a discordant part in social science. Of course, the business man figures how to "make money" on the basis of the prices that he has to pay for labor, materials, and equipment which he uses in his business. The scientific economist, however, should not be directly concerned with this sort of figuring. His job is to explain why the business man has to pay the given wages or interest or what not. Since producers' goods may require "costs" and therefore may not exist, and since they may be producible and therefore may not be scarce, he cannot assume given quantities of the several productive agents

or given proportions in combination. Nor can he consider these agents as passive and unaffected by the rewards they receive. To say that the margin in the determination of the value of one thing is determined by the value of another thing, and so on, is to think in circles. One of the sadder aspects of such circularity is that in the case of labor, the marginal-productivity theory has sometimes been made the basis for "justifying" any wage, no matter how low.

(6) Closely related to the foregoing point, is the general process of *imputing values to the services of the several factors of production*, that has become so prevalent in Distribution theory since the development of the Austrian School. Sometimes the economist cavalierly takes a going business apart. He assumes that the various factors are available in such quantities as may please him. Then he proceeds to add or subtract the various parts, in order to get a basis for guessing at what would happen to the total product, and "imputing" the variation in assumed results to the variable part. From the point of view of the business man, who takes the existing prices and physical quantities for granted, the procedure may have empirical value. It is, however, out of the question for scientific use. Probably it would never have been adopted by the Austrian School except for their adherence to a one-sided subjective theory of value, and their assumption of the validity of so-called utility costs (opportunity costs).

(7) At this point, it is well to refer to the fact that many economists *leave the entrepreneur himself out of the picture when it comes to discussing diminishing productivity* and the determination of the shares of Distribution by imputation. This procedure speaks eloquently in support of the accusation that their standpoint is similar to, if not based upon the entrepreneur point of view, and that their economics is business—or politics.¹⁵ The ear-mark of this procedure is found in the treatment of the size of business as if it were a matter separate and apart from the law of proportionality among the several factors of production. The entrepreneur is

¹⁵ Under a totalitarian state, the entrepreneur function would be in "the government."

treated as if his job were to apply the law of diminishing productivity, he being the controlling factor. One set of relations concerns his substitutions among the other factors of production for the purpose of getting the most profitable proportion, as he sees it; another concerns the size of his business or the problem of large *vs.* small scale business. As a matter of fact, these two problems are aspects of one problem, and both concern the proportion among the factors of production. Enterprise is a factor of production, and the size of the enterpriser's business is fundamentally the proportion in which entrepreneurial ability is combined with the other factors. Any other treatment of the matter is usually a business treatment, and completely opposed to the analysis that is required from a true social point of view.

Leaving the entrepreneurial factor out of the problems of diminishing productivity and balance among the factors of production, is like leaving Hamlet out of Hamlet.

(8) Finally, among the more common errors of importance that one finds attending the widespread adoption of the entrepreneur point of view, one must note the *treatment of the factors of production in terms of value*. Particularly since the publication of J. B. Clark's *Distribution of Wealth* (1899), a considerable proportion of American economists have illustrated this tendency by reducing capital and land to terms of money, and treating them as practically identical in significance from the point of view of economic theory.

Strangely enough, J. B. Clark's reason for "funding" these two factors of production was entirely different from that which is given by most others. His was an extreme societistic point of view, while the typical American economist today leans toward identifying land and capital and treating them as "so many dollars' worth", because he thinks it conforms to the individual business man's usage. Thus "extremes meet"!

Among the many criticisms that may be made of this theoretical tendency, the most fundamental and important is the fact that it leads to assuming the value of capital and land, and thus to circularity in reasoning concerning the determination of the prices of

their products. Moreover, it virtually prevents the economist from going into the fundamentals of the determination of the value of the factors themselves; for only when he considers the technological conditions which limit their quantities and efficiencies, can he understand and explain why they have any value at all, and how much value they have.

One of the most serious aspects of such conditions as the foregoing, is that the differences in point of view and in resulting theory are either not recognized or not fully analyzed by some economists. This results in mixed and inconsistent doctrines, and makes the economist's analysis ineffective. His "views" clash with one another, and with those of other economists, with the unfortunate result that economics itself falls into disrepute. Among the more recent manifestations of this fact, is the rise of the advocates of "monopolistic competition" or "imperfect competition" theory, as will appear if the discussion on pages 144-149 is read at this point.

2. Society Seen as Consisting of Separate and Uncorrelated Classes or Individuals

When the interrelations and interactions among the individuals and groups composing a society are not adequately realized, it becomes difficult for the economist to see the common interests which exist among men. This, in turn, leads the thinker to exaggerate the difficulty of explaining the tendency to equilibrium among social "forces".¹⁶

Many economists, by accepting this kind of separatist approach, are led to make little or no distinction among the various selfish and clashing interests of individuals and classes. Thus they may consider it impossible or inexpedient to separate socially productive activities from those which are merely acquisitive. Some even include predatory activities in their systems of economics.

Closely related to this attitude, is the very common treatment of "the government" as if it were an entity separated from and uncorrelated with its individual citizens.

¹⁶ Of course, one may go to the opposite extreme if one incorrectly regards the "members" of society as having none but common interests.

The result of this sort of separatism is that the economist is encouraged to propose reforms, or to defend as "theories" of distribution, plans or policies which involve taking income or wealth away from one individual or group, and giving it to some other individual or group. The danger is that the one may be injured at least as much as the other will be helped. In addition, there is the danger that economists will be tempted to adopt "theories" which seem plausible, because as a result of their considering some class or individual as separate from other classes and individuals in the society, they do not consider the full effects of their schemes. In America, "the government" is often treated as a sort of bottomless source of power and wealth, a position which is possible only when it is thought of as more or less separate from and uncorrelated with its citizens.

(1) One of the general results of this sort of error is found in the *false separation between consumers and producers*. This is so whenever the economist argues that underconsumption is the cause of business depressions, or whenever he argues that consumers must be given purchasing power in order to stimulate production. These ideas run counter to the general truth that in the long run consumers must be producers; and sometimes they even run counter to the truth that the duty of producers to produce is limited by the right of consumers to consume.

Probably, moreover, there underlies this thought, the old question whether consumption is the end of economic life or whether it is the means. Certainly, one of the most confusing underlying clashes in current economics, remains the question, *whether productive activity is not an end as well as a means*. This question is deeply imbedded in the thought of Alfred Marshall,¹⁷ and the fruit of Marshall's lack of clarity in this respect is seen in the diverging lines of thought followed by his students. Nor can it be dismissed by saying that it is just a question of the scope of economics. The point is that the scope of economics depends upon the economist's concept of society, and that in turn upon his position with relation to idealism.

¹⁷ See Talcott Parsons, *Structure of Social Action*, Chaps. IV and XVIII.

(2) Again, this phase of separatism finds expression in an illogical distinction between *Distribution and Production*, the most frequent case being the proposal to pay wages to laborers without regard to the value of the product attributable to laborers. It is doubtless possible, at least for some period of time, to give any factor of production a "share" in the joint products of industry which is determined without regard to product. This, however, would have to be done on some basis other than economic analysis. Even if the reward given to labor were determined on the basis of some ethical concept of the laborers' "needs", there would still be stubborn questions as to what would be the effect upon the total amount to be distributed, and how long that method of distribution could be carried on.

Here, then, is a case in which ethics is necessarily limited by economics. More than that, it is a case in which an economist would necessarily be drawn into making ethical judgments, and his "economics" could not be a science. For example, "the government" may be regarded as a way of making choices in consumption, but if so, how would the "choices" be determined? What choice would individuals have? What validity could any scientific laws have?

(3) The absence of a true concept of society not only encourages emphasis of uncoordinated class and group interests; it also tends toward an emphasis of the difficulties which lie in the way of economic equilibrium. With predatory and acquisitive activity regarded as prevalent, underconsumption as chronic, and value as not reflecting utility, the thinker readily demands state control in lieu of reliance upon self-interest coordination through "free" exchange. And in the twentieth-century credit economy this control becomes some scheme of "managed currency", or manipulation of "money rates", or both.

3. Separatism in Time

Two of the outstanding cases in which economists sometimes fall into error through failure to allow for the differences which come with the lapse of time, are the following:

(1) According to the "*dosing method fallacy*", some economists

add successive units of one factor of production to other factors of production, and assume that the resulting decrease in product per variable unit forms the basis for a sort of surplus. This surplus, they describe as being the difference between the relatively small average product per unit that exists after the last unit has been added, and the larger average products per unit which at one time accrued to the earlier units. This procedure is invalidated by the fact that the earlier conditions, and the greater additions to product which came with the earlier "doses", cease to exist in the present.

An illustration of this fallacy occurs in the theory of demand schedules and consumer surplus. If an individual first bids \$10 for one unit, and later bids \$4 for a second, there is a lapse of time and a historical record in which the price paid for the second unit is conditioned, among other things, by the \$10 previously paid for the first unit. But if the problem be one of determining the price in a situation in which two units are offered and bid for *at the same time*, there is no "first", and no "second". The fact is that the price of either is conditioned by *being one of two*, and not by a price paid for the other. (Thus the price of two tends to be the marginal \$4, not the average \$7.¹⁸)

(2) Perhaps even more common is the *use of cost curves in lieu of supply schedules*, in a way which presents a mere historical record, when what is required is an arrangement of the offers, or supply prices, in the market at a given time. This is most confusing to the student of economics. He is asked to approach a problem of the determination of a market price. Naturally, he tends to visualize this problem in terms of an equilibrium between two schedules, one of buyers' bids and one of sellers' offers, recognizing, of course, that costs of production influence the sellers' offers. But he is given instead, a schedule of buyers' bids or demand prices in the market at the time, and along with this, a curve representing the "cost of production" for different quantities of the product in question. The unreality and futility of mixing the determination of a market

¹⁸ Cf. A. E. Monroe, *Value and Income*, p. 21; A. Marshall, *Principles of Economics*, (8th edit.) p. 126n. It should be noted that the error in these cases is not essentially a matter of time, and the degree of error does not vary in proportion to the time; but it lies in differences which involve time.

price with a historical record of increasing or decreasing cost, should be apparent to any economist on a moment's consideration.

(3) Finally, there is the attempt to deal with "*short time*" and "*long time*" equilibria as if they were two unrelated phenomena (or logical categories). The fact is that the stream of time, and income and outgo, cannot be chopped into pieces which are to be treated separately in any scientific analysis or explanation. The short time must be a part of the long time. The "forces" which "work" in a short time must be the same sort of forces as those which work in a long time. Any "tendencies" must be the same. For example, the argument that cost determines value is no stronger, in terms of tendency, for "the long run" than it is for a short period.¹⁹

(4) False separatism in the field of time is well illustrated by the current tendency to revert to the old Classical assumption of "*the stationary state*". Thus the mathematical economists and the price economists both are given to thinking in terms of an assumption that the nation's equipment of capital goods, and presumably its labor force, are maintained and replaced without change. Or sometimes they assume "social growth" of a *gradual and steady sort*.²⁰ This sort of procedure implies either that the stream of time is uniform or that "at times" it ceases to flow.

B. False Articulation

At the other extreme, as opposed to separatism and the entrepreneur point of view, there are the *organismic theory* of society and the doctrine of the *corporate state*. (The latter concept leads the thinker to regard the state or nation as being identical with the society.) In the preceding pages, this organismic point of view has been discussed sufficiently to indicate in a general way the kind of error in economic theory to which it leads. All that is required

¹⁹ If goods have to be sold regardless of cost or expense, it is not because of the length of any time period; it is because of perishability, lack of demand, etc., etc.

²⁰ E.g., F. H. Knight assumes "social growth", apparently because he assumes that "the plant itself is never consumed". The mathematicians, such as H. L. Moore, assume a constant time factor which "business forecasters" compute as a "secular trend" (!)—a term of ill omen in the United States since 1929.

here, is to add the statement that it is usually associated with an emphasis of and dependence upon *institutions*, and that this association leads the thinker either to limit unduly the scope of economic theory, or to deny that economic laws exist. It is thus apt to rob economics of its scientific character.

One can hardly think of an organism or a government without thinking of something which is articulated and held together in a formal way. Accordingly, the thinkers who fall under the foregoing head generally assume that their organic societies or states are composed of certain rigidly determined classes.²¹ These are "articulated", or regimented—to use a recently much-abused term—by authority or custom, or both, for a "social purpose".²² Thus no voluntary rendering of mutual services by individuals can be visualized; and there can be no free competition or quantitative objective values.

Or other thinkers, less extremely idealistic than those who regard society as an articulated organism, base their thought upon certain special *institutions*, such as private property. As already noted, many economists think of Distribution as being a matter of contract and the "payment" of various sums by employers to employees, by renters to landlords, and the like. This all depends upon the assumption of the institutions of private property, contract, and the wages system. It would have no validity or reality in a Communist state. Surely, it is strange to find economists attacking Adam Smith and other Classicists on the ground that they were apologists for the capitalist system, while at the same time they may themselves be propounding or accepting theories which are good only on the assumption of a similar system.²³ (Evidently, the bases of economic science lie in human nature and external nature.)

²¹ E.g., Adam Müller's soldiers, landed gentry, producers of necessities, merchants, teachers, and clergy.

²² The German economist, O. Spann, "sets out from the extant articulated objective totality of the body economic". (Cf. Haney, L. H., *History of Economic Thought*, p. 672.)

²³ E.g., F. H. Knight argues that Distribution must be regarded as "payments for services", and his whole theory is based upon property rights. Thus he thinks of wealth and capital as "owned" goods, and excludes labor only because it is not property. See his "The Ricardian Theory of Production and Distribution", *Canadian Jr. of Econ. and Pol. Sci.*, Vol. 1, pp. 8-20.

Another aspect of this dependence upon some institutional set-up, is the fact that it leads to reasoning which does not proceed from cause to result. Some economists have not only failed to *explain* the existence of institutions, but, by assuming the existence and controlling character of institutions, they thereby set up a machinery which dominates man. Instead of dealing with the economic motivation of men as a sort of "force", they deal with payments made according to customary arrangements, which they undertake merely to describe.²⁴

Needless to say, an economist may be truly scientific while recognizing the existence of particular institutions, and making allowance for their influence in modifying the application of economic forces at given times and places. But, as a scientist, he would seek to explain the institution to the extent that it affected his laws or predictions, inquiring whether it be fundamental, and the more so if it be regarded as man-made. He might find it to be merely the result of the same demand and supply conditions which determine objective exchange values which are the criteria of economic science. The position here taken is that institutions are changing (temporary), local, and secondary (non-fundamental) phenomena, compared with which the motivation of the economic activity of man is relatively constant, general, and primary.

If the theory does not afford a basis for understanding the existence of cooperation among separate elements, then central regulation or control is apt to be accepted by the theorist. This comes to much the same end as theory which starts by assuming that the whole is primary, and that the parts are separate merely as articulated parts. This is illustrated by the inconsistency within Communism. Communism contains an element of "separatism" in that it requires a struggle against the tendencies of unequally productive individuals; but this results in coercing them to accept equal distribution. In fact, Communism and Fascism both fall back upon central coercive control of individual activity, since neither takes account of real costs as motivating individual choices. An eco-

²⁴ This applies to the Institutional economists proper, especially the followers of Veblen.

nomics which regards individuals as so different, or so lacking in tendencies to cooperate, that automatic adjustment and social action are impossible, ends where an economics which regards individuals as "articulated" parts of an authoritarian state, begins. Extremes meet.

C. *Lack of Correlation and Consistency*

The false separatism between production and consumption has already been mentioned. This case, however, is only one of a number of cases in which the broader divisions or phases of economics are not adequately correlated in current theory, leading to inconsistent logic and incomplete coverage of the field.

(1) First, and with more especial relation to the subject matter of this work, the lack of correlation between the theories of Value and the theories of Distribution requires careful consideration. A very definite illustration of this weakness appears in the fact that one seldom finds any direct or specific basis for establishing a relation between the theory of wages and the theory of value. In a more or less fragmentary way, it is usually pointed out that the demand for labor comes from the product, and that the quantity of the product depends somewhat upon the quantity of labor. These two facts are hardly coordinated, however, since one is in terms of desire or demand intensity while the other is in terms of physical quantity. More than that, they are not brought together and interwoven in the joint process by which the values both of the product and of the labor service are jointly determined. In fact, it is all too rare to find the theory of wages expressed consistently in terms of a valuation of the productive service performed by laborers.

Where does one find a discussion of the relation between a quantity of labor and a quantity of the good which labor produces? These physical units are not brought together for joint measurement on the base line, the OX axis, of our diagrams. Rather this important aspect is often disregarded, as being a matter of mere technology.

Again, there is too little discussion of the *relation* between (1) the

costs and subjective values—the motivation—of the laborer and (2) the value of the product.

Finally, there is no joint treatment of all the costs and values involved in the functioning of labor, capital, and enterprise, brought together and correlated with the determination of the value of the joint product at a given time. The student is usually given separately a theory of wages, a theory of interest, a theory of profits—perhaps—and a theory of land rent. Somewhere else, he is given a theory of value. None of these several theories may be strictly on the same basis. It would be difficult, if not impossible, to combine, synchronize, and coordinate them in the explanation of "Value and Distribution".

To a considerable extent, no doubt, this uncoordinated condition of value theory arises from the fact that a good many economists have sought to treat the shares of Distribution without relation to Production. Again, the reason may be that they have some ethical scheme. Just as often, however, it is because they do not undertake a fundamental explanation of *determination* in terms of causation, but are content to accept some such general idea as "bargaining power" or "marginal productivity" in lieu thereof.

Sometimes, again, the trouble seems to lie in treating the shares of Distribution, not as shares, but as rates or rents per physical unit of the several factors of production, such as bushels per acre or output per man-hour.

One of the most unfortunate results of all this, is that the student is never quite satisfied that the "purchasing power" element in the demand for economic goods is honestly handled by economists, or freed from illogical circularity. Really to explain value, it is necessary to correlate production with consumption through Value and Distribution, so that it may be understood how the purchasing power of the demander and would-be consumer, is earned by his service as a producer and supplier.

(2) As just noted, there is the closely related shortcoming of *failing to correlate the theory of Distribution with the theory of Production*. This is sometimes seen in the treatment of wages as if

the Distributive shares were to be put on the basis of the laborer's "needs", regardless of what he produces. The fundamental difficulty here lies in the fact that Distribution is a matter of values, and is generally so recognized; while Production is treated as a matter of *utilities*. In order to make production and consumption co-ordinate, the definition of production has come to run in terms of utility creation. Distribution, however, being somehow entangled with buying or selling, is said to be necessarily related to prices.

Thus economic theory presents the strange spectacle of a discipline that has several recognized compartments which are supposed to be coordinated, but which in reality are on different levels and so blocked off from one another that the thinker moves about among them with difficulty. As long as production is defined in terms of utility, it will be found impossible to correlate fully the theories of Production and Distribution, and the loose thinking which has been so characteristic of much of the theory of Distribution will not be effectively exposed. It is high time that economists recognize that in reality we have today not one science, but two bodies of thought—a value economics and a utility economics.²⁵ The latter appears to be a contradiction of terms. Worse still, what now passes as economic science is often an illogical mixture of the two.

(3) The foregoing criticism leads to the point that some economists *do not carry their theories of Value and Distribution into the actualities of economic life, since they do not correlate it with their theories of Production and Consumption*. To this extent their thought is therefore incomplete and unreal. They deal with production and consumption as though we still lived in what Bucher called the independent domestic economy—that is, one in which production is for direct use. In reality, we live in an exchange economy, and even in the extraordinary conditions that prevail in the world today, the price system still plays a considerable part. In any case, division of labor and exchange of a sort are highly

²⁵ See below, pp. 468ff. In fact, there are often three separate economic systems to be found in the thought of one economist—utility economics, value economics, and price economics.

developed. Production, therefore, is and must be governed by some valuation process which is more complex than utility or any direct relation between effort and want. Consumption, too, must be related through demand to values of some sort.

But some economists would eliminate the price system and discard the theory of Value and Distribution. This would leave them the field of production and consumption on some level of utility or "service". Such thinkers may accept Collectivism, in which case they would solve the problems of economic life by authority. Others may merely be idealists who would turn economics into welfare, and determine Distribution with reference to ethical or other considerations. In either case—if the thinker assumes that there will be enough of the various goods to go around(!)—there need be no problem of choice. No costs need be counted. There would be no economic science.

Or materialistic thinkers may arrive at much the same result by eliminating the problem of cost, and substituting therefor the assumption of a subsistence basis for labor and perhaps for capital. Such was the tendency among the older Classical economists with their "iron laws".

Those who define production and consumption as dependent upon the criterion of utility, either do not see the problem of economic life as it really is, or if they do, they must make some sort of logical *saltus* that will enable them to jump from utility to value. (It may be that something of this sort was in the minds of the Austrian School.) It does not seem, however, that the thing can be done unless we substitute for the idea of value as relative importance, the idea of value as an absolute quality. Then we must either assume with the utility economist that things are available for consumption and are desired, thus avoiding the problems of production; or we must assume with the price economist that they are available but are scarce, again avoiding the problems of production. In the one case, we virtually have free goods; in the other, necessities.²⁶

²⁶ When the replacement of capital is assumed and taken for granted, its value, and the cost of producing it, are likewise assumed.

And it will be found that if any economy is to be actually managed on such a basis of separating utilities from value, there will be either an "economy of abundance" or an "economy of scarcity". The economy of abundance, in practice, would result from compelling a reduction of standards of living to a point where there would be plenty to go around, and in that limited sense goods would be free. The economy of scarcity would exist as a result of there being so little motivation to production that supplies of most goods would be scarce relatively to the want for them, and standards of living could thus embrace only the necessities of life. Abundance makes for less economy; less economy makes for scarcity.

The problem in this regard seems to be the problem of relating the economic side of life to life as a whole. *We have to define economics in terms of value, and to keep Distribution related to value, if we are to have any basis for determining objectively how much of the things that men want, they will find it worth while to produce.* This is why it is expedient to synthesize Production and Consumption, on the one hand, with Value and Distribution on the other hand, in terms of objective value.

The simple truth is that economic production and consumption are concerned with utility, but only with *valuable utility*! Free goods have utility; but making them is not production. We do not "consume" free goods. Clearly, therefore, production and utility-creation cannot be identical.

II. PROPOSALS FOR REMOVING INCONSISTENCIES AND SHORTCOMINGS IN ECONOMICS

It will be apparent from the foregoing discussion that there is much inconsistency in economics. Among comprehensive works on economics, how many are there which are not seriously marred by a failure to proceed from fundamentally-based and harmonious definitions, and to follow a logically coordinated train of thought? In how many are the criteria of economic analysis clearly understood and rigorously applied?

Among the more comprehensive and influential economic writings, it is probable that the ones which are most thoroughly con-

sistent, are those which have proceeded from rather extreme points of view, such as the very different works of J. B. Clark and H. J. Davenport.

The object of the foregoing critique is to analyze some of the main shortcomings of current economic thought, and thereby to bring out more clearly the criteria of economics as a science. Now it will be well to present in brief outline some suggestions concerning what may be done to remedy the existing situation.

1. The Underlying Philosophy

It would seem to be decidedly desirable for the scientific economist to accept, at least tentatively, *a frankly dualistic position* in philosophy. Indeed, it seems to the author that it is the essence of science, as we have come to know it, to deal with equilibrium; and scientific equilibrium implies the existence of such things as space, time, force, and the like, as observed and understood by man. The concepts of "cause and effect" and of "forces" tending toward "equilibrium", seem to be strictly consistent with the concept of the two realities, mind and matter—man and his environment. Just so, the concept of value as an equilibrium between demand and supply, is defensible only on the assumption of the reality and independent importance of both mind and matter.

A study of the history of economic thought shows that the two great dualities have impressed most thinkers as being the important realities: the duality of (1) man, and his (2) physical environment; and the duality of (1) the individual, and (2) the society. The problem of the social scientist is the problem of equilibrium in these two fields. It is the problem of the golden mean, and involves a two-fold process of adjustment and cooperation on the part of man. Values arise out of this process of adjustment between man and his environment, and between the individual man and society. At the same time, they afford the basis for cooperation.

One important line of cleavage between materialism and idealism in economics is found in the assumptions made concerning the technological conditions of life, both external and internal. The conclusion reached in this work is that the existence of consumers'

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goods, or their "scarcity", cannot be taken for granted; but that economics can and must assume the existence of (1) certain primary economic agents, or factors of production, and (2) wants and desires for goods. At the least, man and "land", are known to exist, and with them are associated various degrees of "natural" scarcity and costs. And man's desires for consumers' goods influence man to produce, and to use land and capital goods for that purpose. Thus value is explained as equilibrium; it is not taken for granted, either in money or in other goods. The desire tendencies characteristic of man play their part. They are limited, as well as aided, by material objects.

By adopting such a dualistic philosophy as the basis for economic theory, thus avoiding extremes, the economist escapes scores of errors with which the course of economic thought has been strewn. With particular reference to the problems of the day, he will avoid the Mercantilist error of confusing government with society; and at the same time, the Neo-Romanticist error of considering "the government" as being something separate and apart from its citizens. The latter, for example, would treat the corporate state as an independent and separate entity, and assume that any individual who is in power, thereby acquires ability to do "social planning" for all other individuals.

It is probably as true now as it has ever been that synthesis is the way to truth. Like all social scientists, the economist must see the one in the many, and the many in the one. But no mere mixture of extremes will do, nor can we make one out of many by merely mixing the many. Economics cannot proceed by the road of idealism in Distribution, while following the road of materialism in Production. One cannot at one and the same time both (1) deny the existence of economic law, and (2) plan economic life. Nor can any mere swing from one point of view to another take the place of a synthesis. Too many thinkers oscillate from one extreme to the other, as if by the rapidity of their oscillations they could avoid a real synthesis. But "production for service" can be attained only when production for profit means the same thing, i.e., when profit = service. When objective value is recognized as a

synthesis of subjective values, which subjective values are based upon utilities, then we may have consistently and continuously as much production for service as is profitable from the social point of view,—which is all the production for service that we could have in the long run under any circumstances.

2. The Postulates

As a first step towards the clarification of economics, with reference to its postulates, economics must deal with man as he is; it must proceed from an understanding of the *nature of man*. This should be obvious, because social science must either know man ("know thyself") and so be able to understand individual motivations and democracy and competition; or it must fall back upon a reliance upon authority.

It is not necessary to assume an economic man. It is not necessary to assume that men are born with either a "moral sense", or with a "propensity to truck and barter", or with a "propensity to spend". It is not even necessary to assume that economic motives function separately apart from the rest of man. Just as a man can desire an object even if it is "bad"; so he can desire one which he knows to be "good", and perhaps desire it the more on that account. So it is with aesthetic qualities.

Economics need not assume that individuals are hedonistic. It does not follow, however, that "reason" and "desire" are generally opposed to one another! Reason may hold a desire to be important. Reason may influence the nature of a desire. On the other hand, primary or unreflective desires can and do influence reason. After all, the nature of the means depends somewhat upon the ends.

Psychology leaves much to be desired, but at least a step towards truth is suggested by introducing the concept of "desire disposition" and "desire tendencies" in lieu of mind, feelings, instincts, and such concepts. These are not only consistent with a part of behaviorism, but they also permit recognition of the independent reality of any observed set of tendencies on the part of an individual to feel and act, and even its primary importance. We must assume that individuals have desires, in much the same way that

we assume that there are so-called forces in the physical world.²⁷ These desires are men's "ends", or determine their ends.

In this connection, the economist may allow ample place for ethical, aesthetic, and other considerations. He need not, however, call upon authority to control the individual, but only to fix such rules for the game of economic life as will, without destroying or reducing the motivation, limit activities in accord with objectively established principles.

The concept of *society* presents a typical case in which synthesis is required in order to allow an understanding of the fundamental reality: one must see the individual in society, just as truly as one must see the society in the individual. The true social point of view is the point of view of a social individual. Thus only can such a point of view be made real.

This does not mean that the economic society is peopled with mythical "economic men"; but it does mean that the economist's society is that aspect of society or societies taken as a whole which centers in economic relations, and that ethical or other motives are of interest to him only as posited data which may aid him in understanding the course of men's wealth-getting-and-using *activities*. It may, however, be said to mean a true economic man in the shape of an economically social individual who lives in accord with the mutual dependence and consciousness of the desirability of exchange which characterize the economic aspect of society,—the economic world.²⁸

Incidentally, the significance of competition as a postulate of economic science, is to be noted.²⁹ Competition is here assumed as an economic ideal—a condition essential to objective values and the optimum in productivity. It is assumed that as competition becomes ineffective, conscious regulation becomes desired and desirable; but that always the regulation of industry is designed to attain the results that competition alone could give. Even if it were known that no competition could exist, the control would be directed according to the *theory* of competition.

²⁷ Of course, no one knows what "forces" or "desires" are. We merely use such terms to indicate the conditions which we observe precede or attend given phenomena.

²⁸ Haney, "Social Point of View in Economics," *Q.J.E.*, November 1913, pp. 138-9.

²⁹ See Chap. II, pp. 130-136.

3. The Theory of Economics

Further discussion of the bases for economic theory in general, however, is not necessary here. Moreover, the position here suggested will be demonstrated in more detail as required in developing the theories of Value and Distribution in the following chapters. This introduction, therefore, may be concluded by summarizing as briefly as possible the steps which characterize the author's attempt to increase the consistency of economics, and to establish it more firmly upon a scientific basis.

(1) *Value*. First, with relation to economic theory proper, the emphasis is to be placed upon value. The characteristics of the discussion of value which follows, are these:

The theory is based upon a discussion of the *causation* of the *quality* of value. This fact is brought out by an analysis of value genetics which has much importance as a basis for the more elaborate theory built upon it. It shows that value is strictly relative, though the relativity is not between unrelated parts. (Desires and "goods" are interdependent.)

It shows the importance of the technological background, and the nature and functions of cost. It sweeps out hedonistic psychology, making it impossible that such psychology should play a fundamental part. The distinction between utility-as-desire and utility-as-want-gratification, is made apparent. The whole problem appears as one of equilibrium or adjustment between subjective and objective conditions.

The relation between the quality of economic value and other values—ethical, political, etc.—is emphasized, at the same time that they are kept logically separate, thus dealing effectively with the challenge of welfare economics, sociology, and other socio-ethical criticisms.

Desire is presented as the basis for the concept of marginal utility, thus vitalizing that concept, and giving it a place as a true motivating "force".

In dealing with desires, positive and negative, no attempt is made to measure them, but it is merely shown how they are measured in

the "minds"³⁰ of mature individuals; that is, how such individuals are motivated. Thus subjective "worths", values, and costs, are explained, and this explanation leads to bids and offers ("demand prices" and "supply prices".)

The significance of objective value is greatly increased by demonstrating its nature as a social value built up by a democratic process through a synthesis of the subjective values of the individuals who compose a society.

In tracing the determination of economic value, the process will be, to impute cost to expense, instead of imputing expense or price to cost, thus avoiding the assumption of prices as a factor in the causation of price. It is more logical to deflate expenses than to inflate costs! In this connection, the terms, "disutility cost" and "expense cost", are suggested as contributing a little toward greater clarity in thinking.

The position of "opportunity cost", so-called, in social economic theory is clarified. The lack of fundamental significance of the concept is pointed out, at the same time that its utility is explained as describing the psychological process by which the individual business man correlates his activities with those of others in society. The only validity of opportunity cost is as a name for the process by which enterprisers or other individuals balance desires (utilities, costs, etc.) and make substitutions. Above all, from the theoretical standpoint, there is avoided the vicious logical circularity which arises when price-determined opportunity cost is set up as a basis for determining prices.

In analyzing demand, the element of "purchasing power" which so frequently is used to beg the question of value determination—perhaps to escape ethical responsibility with reference to poverty—is treated in a more fundamental way than is often the case.³¹ It is shown to depend partly upon technological conditions, and partly

³⁰ By "mind", the author means the characteristic set of tendencies of an individual to make adjustments at any given time. His capacities, "conditions", habits, etc., differentiate his "mind" at any given time, from that of another individual or from that of himself at other times. Memory and association, together with the conditioning characteristics of the individual, are important aspects of the concept of "mind" as here used.

³¹ See below, pp. 249, 406, 546f.

upon the psychology of the potential buyer as affected by his individual margin of consumption. The purchasing power element in demand is not taken for granted; it is explained.

The value of money is also explained in a way which is free from circularity, and which allows money to function as a means of measuring objective exchange values. In this connection, important use is made of "subjective worth" in explaining the importance of money to the individual.

(2) *Distribution*. As to Distribution, the cardinal points are as follows:

It is treated as a phase of valuation, and the determination of the shares in Distribution is treated as a problem in determining the values of the services of the several factors of production.

The theoretical problem of Distribution is regarded as soluble only by a process of simultaneous and joint determination of all economic values. Wages, interest, profits, and rent are determined at the same time that the values of the joint products of labor, capital, enterprise, and land are determined. This requires a somewhat complicated form of presentation; but it greatly simplifies the understanding of the theory. It enables us to rid ourselves of false separatism and circular reasoning. Only through joint and simultaneous determination can we arrive at the truth in Value and Distribution.

4. The Method

The technique of the analysis and presentation of the theory, is characterized by the following points, the need of which has appeared in the foregoing critique of the current theory:

All definitions are presented in terms of causal forces, and with relation to functions performed, wherever this is possible. Only by definitions that are developed in terms of cause and function, can the economist avoid overlapping, duplication, and circularity. Above all, it is only by such definitions that economists can reach agreements with one another. This is of the utmost importance; it is not "word chopping". The teacher should make such definitions of the greatest interest and importance. Indeed, to arrive at

one, is a high adventure. And once arrived at, the whole of the theory is epitomized.³²

A liberal use is made of the Crusoe technique—at least, what might superficially be described as such. In each important phase of the theory, an attempt is made to explain determination in terms of the motivation of a single individual. This has many advantages. (1) It requires no objective measurement, since desires and aversions are, within the given individual's mind, commensurable and comparable. (2) It allows an individual point of view, while at the same time it avoids clashes of interest with other individuals, and thus, as it were, makes the individual the society. An explanation of what goes on in the individual's mind will come very close to explaining what must go on in a theoretically perfect Communist society. (3) At least, there can be no dependence upon capitalist institutions. (4) It should be noted that this technique does not rely upon going to the opposite extremes of either individualism or societism, but combines them; for the individual, considered as living in an independent economy, has much the same problems as the totalitarian state. (5) It affords the basis for generalization, because it avoids false separatism, "hiding behind the government", and uncorrelated value and utility analyses. This point, together with the avoidance of any dependence upon particular institutions, is the great value of the Crusoe technique. (6) Finally, it should be added that it insures that the thinker will deal with *motivation* in some sort of realistic fashion; for human nature and limited physical environment are vividly present.

The diagrams used to illustrate the simultaneous determination of all values (values of products and values of factor services) are believed to be of some interest and importance as demonstrating how economics may avoid false separatism. Such simultaneous determination of values involves certain improvements in logic and analytic technique, among which are the following:

The law of supply and demand, explaining the determination of objective value, is regarded as working through three logically

³² Cf. Hutchison, T. W., *The Significance and Basic Postulates of Economic Theory*.

distinct elements: demand intensity, supply intensity, and the quantity of the good concerned.

Demand intensity and supply intensity find expression in demand schedules and supply schedules, much as in the generally accepted theory of the day, except that these schedules are strictly non-historical, and represent the magnitudes of all elements affecting the tendencies of buyers and sellers toward a given good as they exist at the time its value is determined.

These schedules are consistently regarded as composed of buyers' bids and sellers' offers which are arranged or organized by market forces so that they always run from high to low and low to high, respectively.

The supply schedule is regarded as different and distinct from so-called cost curves, since cost is only one element in supply intensity, and since cost curves are historical rather than a summary of conditions at a given time.

Cost is explained as negative desire, thus showing how it functions as a "force", comparable with desire for goods, in determining value.

"Elasticity" is treated as a concept that applies only to the shape of the demand and supply schedules at a given time, not historically, and is not dependent upon price changes, but is a cause thereof.

In the establishment of the magnitudes which determine the intensity of supply, an attempt is made to contribute to the logic of fusing what are here called "disutility costs" and "expense costs", the means suggested being the imputation of cost to expense. (Incidentally, this allows a place for the older concepts of quantity-demanded-at-a-price and quantity-supplied-at-a-price, although not a fundamental one.)

The individualistic concept of demand and supply as dependent upon price, is put in a subordinate place, as being not fundamental; and what are called "speculative demand" and "mercantile demand" are distinguished as being the quantities that individual speculators or merchants buy because of price changes or price spreads.

By such means as the foregoing, it may be possible to establish more clearly the fact that economics can be a true science, having positive laws. By considering "desires" as motivating "forces" which can be observed, by dealing with objects as related to the desires of mature human individuals, and by considering only those objects that have the social importance which is known when the quality of objective value arises from an equilibrium among subjective values, the economist may deal quantitatively with causal "forces" and their results. He may then establish positive laws, which, though inexact and provisional, are true and important.

It is important constantly to check one's thought in this field against the thought of economists in the past; and many references to the ideas of the leading schools of economic thought will be found in the following pages. It seems, however, that the time is ripe for a study of Value and Distribution which goes beyond a history of the theories. (Probably students of economics should study the history of economics before taking up an advanced study of value theory.) Certainly if economics is to become the social science that many keen minds have sought, there come times when we must lay histories aside, and apply searching analysis to the nature of the data, the basic concepts and postulates, and the hypotheses and theories that may have survived, in the hope of increasing our knowledge of the truth.

5. The Scope of Economics

This introductory critique of economic theory, and sketch of proposed improvements, should not be concluded without mentioning certain questions concerning the scope of the science.

Much of what has gone before, suggests the desirability of narrowing the scope of economics, in order to simplify the problem within the chosen field, and to enable its treatment in a scientific manner. By distinguishing different orders of value, and confining his attention strictly to economic value proper, the economist, as a scientist, can do more exact and helpful work in his limited field.

The proposal here made is that the science of economics avoid

both the extremely narrow scope of the "price economics" and mathematical economics, and the extremely wide scope of utility economics and "welfare economics". It is proposed to coordinate Value, Production, Distribution, and Consumption, as can be done only on the basis of value, treating value as the objective or social importance of goods, including both consumers' goods and producers' goods.

On the basis of an economics which deals only with the tendencies of the individual members of a society with relation to the scarce objects of their desires, as these find expression in choices, all economists can agree in essential matters. By ceasing their vain effort to deal with all aspects of social life, economists may perhaps make a more definite contribution to one aspect—the economic aspect!

Chapter II

THE BASIC ASSUMPTIONS OF ECONOMIC SCIENCE¹

It is customary to call economics a social science. Yet such a statement in reality conveys little definite meaning. What agreement do we find concerning the significance of the term "society"? What agreement is there, even among economists, as to the nature and scope of their "science"? Although it has been over 150 years since the time of the Physiocrats and Adam Smith, we still need to face the problem of clarifying and making definite the fundamental concepts and postulates upon which economics rests.

This fact appears clearly when we consider such phrases as "social value", for obviously this depends upon the meaning of society. Again, when we talk about the distinction between the laws of Distribution and the laws of Production, what do we mean by economic law?

Before proceeding further, however, it should be clearly understood that there is to be no attempt here either to make a complete examination or to go to the bottom of all the postulates of economics. Least of all is there to be any attempt to defend par-

- ¹ See J. Bonar, *Philosophy and Political Economy*, (1909)
O. Boucke, *The Development of Economics* (1921)
R. T. Bye, *Principles of Economics* (3rd ed. 1936)
J. E. Cairnes, *Character and Logical Method of Political Economy* (2nd ed., 1875).
F. Cannan, *A History of the Theories of Production and Distribution in English Political Economy* (1917); *Wealth* (2nd ed., 1928)
T. N. Carver, *Essays in Social Justice* (1915).
S. J. Chapman, *Outline of Political Economy* (1911).
Z. C. Dickinson, *Economic Motives* (1922).
L. H. Haney, "Social Point of View in Economics", *Q.J.L.*, 1913 14.
T. W. Hutchison, *The Significance and Basic Postulates of Economic Theory* (1938)
W. S. Jevons, *Theory of Political Economy* (2nd ed., 1879).
F. H. Knight, *The Ethics of Competition* (1935).
A. Marshall, *Principles of Political Economy* (1920).
L. Robbins, *Nature and Significance of Economic Science* (1935).

ticular postulates or institutions on ethical grounds. The purpose of this chapter is to state frankly the basic assumptions which the author finds that his own mind requires in its quest for economic truth, and to explain them sufficiently to enable other minds really to come to grips with his meaning.

In this spirit, then, at the outset, the reader should note the assumption here made that "science", with its concepts of "law", "cause", "result", "time", "space", "quantity", "matter", "energy", "force", "equilibrium", and the like, has justified its existence by contributing to a better understanding, both of life and of its conditions, than could come from theology or metaphysics.² In short, it is assumed to be desirable to make economics scientific in the sense that chemistry and biology are scientific.

But without further preliminary, most of the issues involved in laying the basis for a science of economics, may be brought to a head by attempting to answer the following six questions:

(1) What is the nature of man, and the relation between man and his environment, as these bear upon economic law?

(2) What is the nature of society and the relation of the individual thereto, as these affect the nature and scope of a social science?

(3) Are economic science and its laws static or dynamic? And does the answer allow us to seek "positive" laws?

(4) Are economic phenomena measurable so that quantitative analysis may be applied?

(5) What is the significance of differences among men and among economic phenomena, as these affect surpluses, differentials, and margins?

(6) Is it expedient to assume competition; or, in other words, do so-called market values have an objective validity?

It is in an understanding of the relationship between man and his environment that we must seek the basis for social science and economic law. (This matter, therefore, may logically be considered first.)

²This is not to assert that these concepts are ultimate, or that science explains phenomena in any ultimate sense. It is not to deny that many scientific terms are used in a sense not much different from the usage of medieval metaphysicians.

I. NATURE OF ECONOMIC LAW³

A science exists only in its laws. It is all too common to define science as being "classified knowledge", but this is at best only an approach to a definition. Large amounts of knowledge may be accumulated and be classified this way or that, but they give us only the basis of science. In other words, they merely make possible the detection and formulation of significant uniformities in phenomena, to discover which is to discover scientific law.

In the word "science" we see the Latin *scire*, meaning to know. To know, however, is to understand—to be able to explain. This we can do only when our knowledge of phenomena is not only classified, but is also interpreted so as to enable us to see uniformities in the relationships among phenomena. Ultimate causation we may never understand, but for the practical purposes of life we can by observation and comparison establish proximate causes in the sense in which the term is used in science.

A scientific law is a statement of cause-and-effect relationship. By this, is meant merely an observed tendency toward uniformity, in the sense that one thing always tends to accompany or follow another thing. Such is the case when we observe that by putting two chemicals together we always get a certain reaction. Thus it is that scientific laws enable men to predict or foretell what will happen under given circumstances, and it follows that the economic scientist always has been and always will be in a sense a business forecaster, who tells statesmen or business men something about what will happen if they adopt certain policies.

Obviously, scientific laws are connected with reason—are rational and discovered by reason. The essence of reason appears to lie in

³ Cf. Robbins, *Nature and Significance of Economic Science*, Chaps. IV and V; A. Marshall, *Principles of Economics*, 8th ed., pp. 30-36; T. W. Hutchison, *The Significance and Basic Postulates of Economic Theory* (1938), pp. 58ff.; F. H. Knight, *The Ethics of Competition*, Chap. IV; M. Weber, *On the Objectivity of Sociological and Socio-Political Knowledge* (1904); E. Phillipovich, *Grundriss d. Pol. Oekonomie* (1914); A. Amonn, *Objekt u. Grundbegriffe der Theoretischen Nationalökonomie* (1926), *Grundzüge d. Volkswohlslandslehre* (1926)

the adaptation of means to ends; and, if we assume the end,⁴ the relationship of means to ends is much the same as the relationship of causes to results. It is hardly necessary, however, to remark that in economics the power of prediction is limited, and still less necessary to recall that many economists have made many inaccurate predictions. These reflections, however, merely constitute a challenge.

Nor need we tarry long over the question whether social laws must be empirical and entirely dependent upon experience, or whether they must rest upon the assumption of uniformity in spirit, and be dependent upon some design which controls all phenomena. Important as this question may be, it seems that it is sufficient for the purpose of the economist to rely jointly upon observation and reason.

It is not the function of any science, social or "natural", to take for granted the existence of whatever is, in the sense of accepting so-called "observed facts" without explanation. Not only is observation an uncertain and relative factor, but also it is true that what scientists call "forces" cannot be observed—they must be inferred or deduced from observable phenomena. Moreover, men have to make adjustments to material conditions, and we have to allow for "survival values". Planning is necessary, whatever the nature of the end—whether it be the "good life" or the gratification of a whim.

In short, values, both "efficiencies" and "importances", are relative.

Thus social science has a vitality which is derived from its bearing upon life. If man desires to do or act, science tells him the best way in terms of relation between means and ends. Those who would proceed without counting the cost, or considering aesthetic conditions, or allowing for the "rights" (feelings) of others, are unscientific.

Perhaps as true as the statement, "I think, therefore I am", is the statement, If I am, I must think!

Such being the nature of science and its laws, the question arises, Are social phenomena characterized by the uniformities which we

⁴ Properly speaking, an "end" is an *intended* result. Cf. Laird, *The Idea of Value*, pp. 37-43.

find in other phenomena? Can we objectively ascertain cause-and-effect relationships in economic life? Upon the answer to this general question depends the scientific character of economics, and it is of high importance to examine the grounds for any opinion.

We find that there have been three general sources for negative answers to this question: ⁵ the emphasis of change and evolution, the belief in the power of mind over matter (idealism), and the tendency to subordinate economic values to other values, such as ethical and political values.

Some thinkers, notably some of the Historicists, see change as the outstanding aspect of social life, and regard evolution as a force which destroys the validity of positive laws. Thus, they hold that all attempts to formulate laws must be relative to time and place, and that the necessity for such relativity makes positive laws inexpedient, if not impossible. These thinkers, however, seem to ignore certain practically constant factors in social life. They also overlook the possibility that evolution may go on in positive economic laws, thus enabling them to run parallel with evolution in economic life, and to maintain their relativity to evolving economic phenomena.

Again, there are many who hold to an idealistic philosophy, believing that the mind can originate ideas, or at least function as an independent contributor thereto. Such thinkers lean more or less toward an acceptance of the doctrine of the freedom of the will. Such a philosophy holds that man is largely independent of his environment. More significantly, it holds that by nature each man is essentially different from others and that each is a law unto himself. It follows that there can be no basis for uniformity in man's actions or in social life, unless we assume the existence of a divine mind or world spirit of which individual minds are parts.

In practice, the idealist is prone to argue that there are no uniformities in economic life unless they come through conformity to some ideal, such conformity to be established by education or coercion, or both. There is thus the assumption that the individual is

⁵ I do not mention the agnostic position, for the reason that one who holds that we cannot know about value must admit that we cannot know that we cannot know!

"perfectible" and that by some system of education and by some uniform set of institutions, a controlled uniformity may be established. This idea takes us over into ethical and political values, and if the economist be one who accepts such an idealistic philosophy, he will regard economics as normative. If we ask him what principles underlie the normative economic laws which he seeks to formulate, he will either fall back upon an acceptance of the intuition of some leader, or, as did Comte, seek to establish a sort of religion.

This does not lead to science, in the usual sense of the term, or to laws in the scientific sense.

Finally, there are always those who regard economic values as a lower sort of value, and who would subordinate them to such values as they find in ethical and political considerations. Therefore, they would control economic life according to non-economic standards. At least, they would leave so small a place for economic motivation, and would so limit that motivation, that economic law would be subordinate and unimportant. In practice, the attempt to combine political, ethical, and economic values makes it impossible to formulate principles, or at least to formulate any which have objective validity.

To the author's mind, however, the answer is strongly in the affirmative, and for the following reasons:

1. Empirical Evidence

Many uniformities are observed in social life and are well established by statistical research. We need only refer to Engel's law,⁶ to the cyclical nature of business activity, to the effect of business cycles upon marriage and birth rates, to Gresham's law, and to practical developments in insurance and advertising technique which successfully rely upon such uniformities.

Such evidence, however, while it might be presented almost without limit, is not conclusive. It is too empirical, and in good part does not rely upon causal explanations. Indeed, such uniformities are subject to complex counteracting influences which often greatly

⁶ Making due allowance for modifications required by more adequate data, and for differences in environment

limit their application. Moreover, there is always the possibility of change—change in environment—change even in man himself.

2. The Nature of Man as a Basis for Law ⁷

The real basis of economic law, if such law is to be considered as scientific (based upon an interpretation of classified knowledge), must be found in the nature of man himself, and in the relationship between man and his environment. For the purposes of the science, in short, economists must frankly accept the man and the objects which he finds around him as being two great realities which, while interrelated, are more or less independent. In other words, economics must find its uniformities or laws in man, in man's environment, and therefore in the relation between the two. Incidentally, this leads to the relationship between subject and object, in which relationship it will appear that value itself lies.

(1) Any study of man may well begin by noting that, whatever else he may be, a man is a physical organism, and as such, is characterized by tendencies to act and react which will later be described in this work as constituting a "desire disposition".⁸ As physical organisms, all men have certain organic wants, such as those which arise out of hunger and fatigue. All men, too, have certain innate⁹ reaction tendencies, or "instincts". In this connection, we should especially note a very common tendency among men toward conformity or "imitation", which, if it be not a true instinct, is nevertheless so often acquired at an early age that it is especially significant, since it alone would explain a considerable degree of uniformity in human action. Surely if everybody were to imitate everybody else, the outcome would be clear.

While organic wants unquestionably tend toward uniformity of individual action, and some "instincts" work in the same direction, it may be granted that some tendencies, such as the so-called instinct of self-display, may be acquired at a very early age, and lead to

⁷ Cf. L. T. Troland, *Fundamentals of Human Motivation* (1928).

⁸ See below, pp. 176-181, especially p. 181.

⁹ The word, innate, is here used to designate not only tendencies acquired in the prenatal stage but also during and after birth while the child is still an infant.

divergencies of action. In the scientific sense, however, such tendencies toward dissimilar action may be classified and understood, and thus in reality become the basis of social uniformities.

(2) In addition to the foregoing bases, it can be said that men in general are endowed with some capacities for making those indirect responses which we call thinking or *reason*.¹⁰ This is a function of the nervous system, associated intimately with the brain. Therefore, since we know that men in general have certain uniformities in the organic structure of their nervous systems, it may be assumed that there are also certain uniformities in their reasoning processes. One cannot but be impressed with the fact that the ancient philosophers reasoned in much the same way that the modern philosophers do, and that the similarity does not vary with the degree of influence exerted by the ancients. Economists today sometimes find themselves independently making the same mistakes that other economists made a hundred years ago. What scientist has not had the experience of following some "new" line of inquiry, only to find it to have been the thought path of a predecessor?

It is not necessary to decide the psychological question as to whether desire and market demand are the result of mere impulse or of reflective choice. The point is that choices are made and that they express preferences, which preferences are conditioned by similar elements. These similar elements determine either which impulse will predominate or which decision will be made by reasoning. It may be of great practical importance to know in particular cases which sort of psychosis is the basis of a demand, but from the point of view of economic science and law, either will serve as the basis for uniformity.

(3) *Is Desire a "Force"?*¹¹ In physics, we deal with "forces" which we essay to measure. In reality, however, we do not measure force in any direct sense, but only as a relation between or among objects.

¹⁰ Cf. J. F. Dashiell, *Fundamentals of General Psychology* (1937), Ch. XIX.

¹¹ One who wishes to get into the mysteries of this subject may read I. H. Knight's articles on "Economic Psychology and the Value Problem," *QJE*, May 1925, and "Fact and Metaphysics in Economic Psychology," *AER*, June 1925; and M. A. Copeland's criticism, "Professor Knight on Psychology," *QJE*, Nov. 1925, Vol. 40, pp. 134ff.

Frequently, we measure it in terms of distance or movement, but always as a quantitative relation between two or more material objects or bodies. No one knows in any ultimate sense what matter is, nor what such "forces" as gravity, are.

While avoiding the thought that the cases are identical, we may *illustrate* the social scientist's problems by stating that in economics the human desire is like a physical "force" as just defined. Thus we may think of desire as a relation between two "bodies", one of which is a human being. Since one of the two bodies is a living organism, the relation is bound to be more complex than that between mere inanimate objects. Even the manifestations of the relation, such as motion and nearness, are complicated by the various "reactions" of the human body, and by the possibility of "activity" that appears to originate within it. But we can and do observe the way in which men behave toward "goods". In some cases, we might even think of the distance which an individual will travel to make contact with a good, together with the speed, as an index of the intensity of his desire for that good. And this, in turn, can be thought of as measuring its importance. We can observe a subject body and an object body nearing one another, as it were, and if we think of the subject as a potential buyer or consumer, and the object as a "good", we may say that a degree of desire is operating.

Moreover, I can "put myself in the place of" this hypothetical subject, and be conscious that what I feel as "desire" leads me to act similarly with reference to the same good. And I may think that I understand other individuals when they explain that they "act" in the same way. In fact, it seems that even if one subject be not fully conscious of his desire and his tendency toward the object—his interest in it—an observer may be! (Hence such validity as there is in behavioristic psychology.)

When two moving objects come together, the "force" that impelled them ceases to be directly observable or measurable. So, when the subject acquires or consumes the object, there may be no desire; the subject and object merge, and there being no separateness, there is no relation—no importance—no value.

Without pushing the analogy further, it seems fair to say that as regards the possibility of scientific treatment in terms of "forces", the difference between physical and social sciences is but one of degree. The very fact that we know that human desires, as motivating forces, are, or are not, acquired, complex, mixed, inhibited, counteracted, etc., proves that we can observe them, analyze them, and "understand" them.

3. Nature of Environment as a Basis for Law

But in addition to human nature, there is external nature. Man always has an environment, and environment certainly presents many similarities to man, which tend to produce some uniformity of human action.

(1) This seems obvious in the case of the *physical environment*—the materials and forces of nature. Since men in general have similar sense organs, we may surely assume that men in general will receive similar sensations from an identical environment. Furthermore, men in general have similar organs, and therefore they have similar limitations. In this connection, it is well to remember the factor of solar radiation, and the probability that the amount of rainfall and ultra-violet rays affect similarly the functioning of all human organisms, perhaps even influencing emotional tendencies and business sentiment with sufficient uniformity and periodicity to be a factor in determining business cycles.

(2) There remains the *institutional environment* with its customary and legal arrangements. But this environment is, within a given society, a basis for uniformity in that all men are subject to the influence of a similar set of conditions in the shape of laws and customs. In view of the occasional interest in "institutional economics" which history shows, it could be desired that more definite conclusions were available concerning the derivation of institutions, so that we might be able to say conclusively whether they spring from the nature of man or from the nature of his physical environment. Perhaps it is sufficient for our purposes here, however, to note that institutions themselves must be explained, and that as we seek their explanation we go back to the elements which have

already been considered, and which have given ample reason for assuming the existence of social uniformities and economic laws. After all, social customs, like individual habits, represent a tendency to act in a uniform way under given conditions. If, therefore, all men were governed by custom, the scope of economic choices might be greatly restricted, but at the same time the force of economic law would apparently be increased. Certainly it would be easier to predict.

(3) Closely related to the institutional environment, but distinct from institutions in the narrower sense, is an element of *social pressure towards economic behavior*, which plays an important part in begetting the uniformity which finds expression in economic laws. It is not necessary to rely upon the motivation which comes from within each individual or from the individual's physical environment. Indeed, we could not do this, since individuals are in fact members of some society which affects their motivation. There is brought to bear upon each individual from his relations with other individuals a mass of directive influences which shape his behavior, more or less independently of his own peculiar motor tendencies. By this social pressure towards economic behavior, is not meant customs or laws or particular "institutions". What is meant, is the force of that division-of-labor and exchange which are an integral part of the whole social life. As long as individuals are really a part of any society, that fact finds expression in a sort of conscious or unconscious cooperation which carries with it the necessity for behaving in a certain way, which we may call economic.

For example, a shiftless, lazy person may seek to avoid effort and try to live without working. A number of compulsions, however, are brought to bear upon him which strongly tend to make him play some productive part in the life of the community. Above all, the author would emphasize the fact that persons of poor judgment, who otherwise would seek to do things for which they are not qualified and who would largely waste their efforts, are driven by the social pressure referred to, to do things which others want, and to do them in ways which are not too wasteful. Storekeepers, for example, cannot too often lay in stocks of goods which no one will

buy. Even the most stupid of them are under some compulsion to stock their shelves with goods which people want, and want with sufficient intensity to induce them to buy. Or, again, if I want anything and am a member of some society such as exists today, I find that if I am to get it, I must make something or render some service that somebody else wants to buy, so that I can in turn buy what I want.

In short, in society most individuals are forced to act as if they had economic sense! The only way to earn a living nowadays is to do something for somebody else, and to do it in such a way and at such a time that what the recipient of the product will pay is in some fashion an equivalent for the trouble or expense which the producer incurs.

Doubtless the system of education which prevails in a given society contributes toward this social pressure, to the extent that it works toward impressing upon each individual the potentiality or the inclination to act in an economic way through cooperation in exchange. It may be that an intensive system of propaganda can be effective in developing such social pressure. Clearly, however, such management or "social planning" is not required to induce the sort of cooperation that is here referred to. Indeed, it seems probable—certainly it has not been disproved—that the free give and take among individuals seeking to make their livings through exchange of goods and services is the surest way to establish social pressures which will lead to economic behavior on the part of those who, through irrational or impulsive behavior, would otherwise not play the economic game.

4. Summary; Law of Economic Motivation

In brief outline, the foregoing gives us the basis for the assumption that men in society tend to act with sufficient uniformity to enable us to seek with reason for economic law. They give us the basis for the validity of the concept of a *modal man under usual circumstances*. (Or if, at times, the *circumstances* become unusual, we still have left the concept of the average man!) The author knows of no reason for believing that the thing we call human

nature has ever changed essentially, and would agree with Prof. W. C. Mitchell in his assumption "that the human nature which men inherit remains substantially the same over millenniums".¹²

Accordingly, a law of motivation may be accepted as a major premise of economic science, and be stated somewhat as follows: Under usual circumstances, most mature human individuals are motivated by similar physiological and emotional disequilibria, habits, and organized sets of emotional tendencies, and therefore *tend* to be similar in behavior.¹³ These tendencies and motives may be called "desires". Then a reasonable hypothesis may be added to the effect that the motives of most men are related to survival, and therefore tend toward activity which, under usual circumstances, tends to be recognized as the easiest or most direct way to fulfil a desire tendency. Thus the present work is not to assume that "utility" or "marginal utility" are pleasurable sensations or gratification "feelings", but that they are "motivating forces", or phases of human motivation.

And, accordingly, there need be no assumption of a "felicific calculus", or rational balancing of pleasures and pains, leading to a tendency toward maximum pleasure or perfection of any kind. Economics should not undertake to generalize concerning *all* men under *all* circumstances. It follows that no difficulty need be experienced in reconciling the theory of human activity and valuation with a recurrence of mistakes and overproduction, or with the existence of business cycles with their periods of "boom" and "depression".

5. Various Concepts of "Law"

Thus far, scientific law has been referred to as if there were no question as to the nature of the tendencies or uniformities which

¹² *American Economic Review*, Vol. 15, Presidential Address before the American Economic Association, 1925.

¹³ This principle is closely related to the psychological "Law of Effect" stated by Schaffer, as follows: "Animals tend to repeat and to learn those responses that lead to tension reductions and the completion of motivated activity." *The Psychology of Adjustment*, p. 126. Of course, actual behavior may consist of acts which differ in form. Also the tendencies may be counteracted.

such law involves. Such questions, however, arise, and first there is the distinction between positive law and normative law.

(1) *Positive Law vs. Normative Law.* A positive law is one which states that a thing *is* or *will be*; it is a law of necessary cause-and-effect relationship *under given conditions*. Thus when we find a statement of law which begins with or obviously assumes the words "other things being equal", and goes on to say that the tendency *is* thus and so, we know that we are confronting a statement in the form of positive law. Such laws are abstract generalizations in the following general form: "Given A and B, and nothing else, the result will be C." Thus there is no ideal standard involved and no norm. A positive law is a statement of fact with regard to a tendency.

Normative law, on the other hand, always says or implies that a thing *ought* to be or *should* be. Thus it involves some ideal standard or norm, which is set up and made the test of the rightness or goodness of any condition. Thus, too, there is involved no necessary tendency, but merely a judgment as to the quality of the thing in question, and perhaps an assumption that some mental or spiritual force may lead to action in the prescribed direction. Reform legislation is usually based on an assumption of some normative law.

Positive law is essentially quantitative in its terms; normative law is essentially qualitative in its terms.

In the author's judgment, normative laws cannot be scientific in any usual or expedient sense of the term.

(2) *Evolutionary vs. Non-evolutionary Laws.* Next there is the distinction between evolutionary and non-evolutionary laws, and this is particularly important in the field of social science. By evolution, we mean an unfolding or development of life from one form or stage to another, which process involves a change in form. Thus evolution requires time and a comparison of differences. Attempts have been made to discover and formulate laws governing such changes. Until we know more about social evolution itself, however—whence it comes and whither it is leading—it seems unlikely that anything very definite in the way of laws will be found in this field.

Certainly the results attained by the Historical School of economists have been disappointing.

Non-evolutionary laws actually exist, and are well illustrated by the economic law of diminishing utility or by the law of diminishing productivity. These are statements of *tendency*, which are true at any given time, or under any given set of circumstances. They do not state what will actually happen during a period of time in which qualitative changes may occur, either in man (e.g., his tastes), or in technology (e.g., use of motor trucks, development of bank credit). As formulated, such laws usually begin with the words, "at any given time", or "at any given stage of the arts". Then they go on to state what *tends* to happen under given conditions. In economics, they mostly deal with or proceed from those factors in human life which are very stable and enduring. These include man's organic wants and emotional tensions, and the nature of his physical environment.

(3) *Quantitative Laws vs. Qualitative Laws.* Finally, quantitative laws are to be distinguished from qualitative laws, a distinction which has already been touched upon. Briefly, a quantitative law is one which makes some such statement as that $nA + nB = nC$. It is a statement of a constant tendency toward a quantitative relation between or among phenomena. Of course, the data involved must be measurable.

On the other hand, a qualitative law would run somewhat as follows: Some A + some B = some C. The quantities of A, B, and C need not be known.

The distinction is like that between quantitative analysis and qualitative analysis in chemistry, the latter being concerned merely with the existence of some element in the compound, regardless of the quantity that may be present.

It is to be added that quantitative laws may be exact or inexact. In the latter case, the law concerns a quantitative relationship, but one which is subject to change. An inexact quantitative law does not convey a statement as to how much of a given result will occur, but states merely that the result will tend to vary in the same *direction* as the cause. An exact law is a statement that a

thing varies "directly as" another, which means that the result is not only larger or smaller, according to some quantitative aspect of the cause, but that it is exactly in proportion.

6. What Kinds of Law Are Possible in Economics?

With the foregoing distinctions in mind, it is time to ask what sort of laws are possible in the field of economics. Can economic laws be positive? Can they be exact? If not exact, can they be worth while? Certainly, no economist of experience will deny that it is often difficult to "apply" those statements of tendency which are accepted by many as being economic laws. It is often difficult even to test such laws. The complications which arise out of the nature of man and his relations to his environment are great, and changes in human desires and in human institutions are sometimes sufficiently great to alter the conditions that are assumed in the formulation of economic laws. Nevertheless, it is possible to make the following statements, which lead to the conclusion that there is sufficient possibility of positive economic law to enable the development of economic science.

First we can assume the "given conditions" which prevail at any given time. Once these are established by careful observation, there they are.

Second, we can draw conclusions as to the tendencies and "results" which flow from these conditions, and from any given phenomena or relations among phenomena, which can be regarded as "forces" operating under the same conditions.

Third, we can formulate these conclusions as laws, and apply them, making such allowances for margin of error as the limitations of our knowledge of conditions require.

Finally, if the "given conditions" change in any essential respect, we may reformulate our conclusions as to tendencies and uniformities, thus changing the law according to the change in conditions.

It should be emphasized that such an attitude and such a procedure do not mean that the laws become any less positive in character. The effect of changing conditions need not deprive us of our powers of analysis or generalization, and certainly *there is no rea-*

son, theoretical or empirical, for assuming that changes will become so frequent or so erratic as to deprive us of the bases for uniformity which have been pointed out. On the whole, the history of evolution and society leads to the conclusion that *most of the time* we can count upon slow, gradual changes, which are merely quantitative in character. Moreover, the violent cataclysmic changes which do occur always appear to bring corrective reactions. We can still count upon the continuity of human nature as well as upon that of Nature herself.

In short, positive economic law is not only possible, but it is worth while. Conditions do not change so completely or so rapidly but that the economist can—he must—formulate his laws for the present. We must have the guidance which is provided by a knowledge of tendencies under the conditions which surround us at any given time. We live in the present most of the time! Moreover, we must assume that the future grows out of the present. While, therefore, we may regard economic laws as provisional, they must still be positive, and they can be true.

Economic science, and especially the laws of Value and Distribution, are built upon positive quantitative relationships. They are inexact. They are highly abstract, and therefore peculiarly subject to the requirement of verification and checking. There is need of frequent examination of the "given conditions". But when this is said, there remains an important field for worthwhile generalization. Economists will be the first to recognize the enormous difficulty of analyzing the separate elements in the complex phenomena with which they deal, segregating and tracing the results, and measuring quantitatively either causes or results. Complex interrelations and changing circumstances in all around we see. But such laws as those of diminishing utility, diminishing returns, and supply and demand, are as valid today as they were when first formulated. Indeed, by careful study, the statement of them has been, and may again be, perfected so as to be truer than ever.

One difficulty with the concept of economic law, lies in the question whether it concerns men as individuals or men as societies. If the social scientist thinks of the individual as an isolated person,

either a Crusoe or a selfish "economic man", he is apt to see economic law as having absolute sway. He may regard it as harsh, since the individual, alone, can do little to counteract it. If, however, the scientist comes to think of society as the great reality—the whole, of which the individual is but a part—he is apt to substitute ideals for material forces, and to fall back upon authority to establish and maintain order. Again, but a small part is allowed for individual choice.

But what if neither presumption be true? If individual and society are equally real and important, and social action may clash with individual action, can there be uniformities or laws? This question introduces the next section.

II. MEANING OF "STATIC" AND "DYNAMIC" IN ECONOMICS¹⁴

Those thinkers who see little possibility of positive law in the field of human feelings, values, or actions, tend to emphasize change. They are apt to suggest changes which they regard as betterments, and to propose normative laws.

Such changes, too, usually involve social institutions, and are designed to improve the condition of man through improvements in his institutional environment. Obviously, individuals, by adjustment and cooperation, can do things in groups which they could not do otherwise. Obviously, too, society lives much longer than any individual, and a social point of view must allow for the possibility of change, at least for evolution. Thus, those who would emphasize society are apt to emphasize what they call "social dynamics".

In short, the concepts of both society and social science are involved in the old question, Is economics a static or a dynamic science?

As a practical matter, the problem has arisen from the rebellion of many thinkers against so-called static economics. Some have objected to the unreality of such economics. Others have charged that static economics is built up as a justification for certain insti-

¹⁴ Cf. Robbins, *Nature and Significance of Economics*, (2nd ed.), pp. 99-103, 131-135; F. H. Knight, *The Ethics of Competition*, Ch. VI.

tutions, such as private property. As least, they feel that it serves to defend some particular concept of a fixed equilibrium as being the best condition, and they rightly point out that such a concept sometimes comes to be taken for granted as being "natural" or "normal". Thus there has arisen an urge to treat economics as a "dynamic" science or body of thought, with the idea that it will thus become more real, or at least avoid the dangerous practice of rationalizing existing institutions.

1. Various Meanings of "Dynamic"

But what is meant by "dynamic"? The matter is not as simple as it first seems, for there are at least two main possibilities in the use of the word, with at least two sub-varieties under each head.

(1) *Quantitative Dynamics*. In the first place, one may take the word dynamics, as used in Social Science, to mean *any quantitative change*; that is, any sort of change which is not confined to qualitative difference. Under this concept of dynamics, we find two distinct ideas. The idea may be that dynamics means any *oscillations around an equilibrium level*, the thought being illustrated by the concept of market values as fluctuating around a normal level. This idea, which is probably the most frequently found, assumes that economic phenomena are governed by "forces" which are considered as causes, and which are constantly at work in such a way as to tend to establish a stable equilibrium. Even though the oscillations are continually in evidence, they may be thought of as continually tending toward equilibrium.

Another concept of dynamics which would also include any sort of quantitative change, is that which regards it as being *motion as such*. In other words, that which is changing without regard to any cause and without any tendency toward an equilibrium, is held to be truly dynamic. This is closely analogous to the concept, found in physics, of what is called kinematics. Such a "dynamic" condition involves perpetual motion, and leaves no possibility of dealing with phenomena in terms of causal forces or normal equilibria. It may be noted in passing that this idea underlies the thought of some of the so-called Institutional economists.

(2) *Qualitative Dynamics*. The second general kind of thought about dynamics would make it a condition characterized by *some particular kind of change*. In short, it would make dynamics apply only to *qualitative changes*. What this means, will become clear by considering some varieties of the idea.

There are those who identify dynamics with *normative changes*. Some would make it practically synonymous with reform, perhaps evolutionary, and not necessarily radical. On the other hand, some would consider only radical revolutionary changes as being truly dynamic—changes which result in the overthrow of what they call outgrown institutions. The extreme type of such thought would be found in revolutionary socialism.

Another variety of qualitative dynamics is distinctly and characteristically *evolutionary*, with no necessary implications of reform, and no revolution. Here we may distinguish two sub-groups: we may distinguish those whose evolutionary dynamics is *teleological* from those who think of it as *scientific*. The former see evolutionary change as tending toward some end or ideal, which of course they assume that they know. The latter, attempts to think of evolution in terms of survival, free from any presumptions as to the first cause or ultimate goal.

Some familiarity with the thought of those who mean by dynamics a particular kind of qualitative change, seems to warrant the observation that they are seldom free from teleological assumptions. After all, they are dealing with qualitative values, and if they are frankly teleological, they must make some choice among ends; while if they reason in terms of survival, the question is, Who are the "fittest" to survive? Also it is difficult to escape the question as to whether the results of the survival test are "best".

2. Economics vs. Physics; Economic Equilibrium Not Fixed

Such being the several concepts of dynamics which one finds among economists, it is well to note that, as the term is used in physics and mathematics, it seems to be much simpler. Static is simply a condition of being at rest, characterized presumably by a condition of equilibrium among such forces as may be bearing

upon the thing in question. Dynamic is similarly a condition of being in motion. But it is important to observe that the thing which is in motion is regarded as being subject to the same forces—the forces which are tending to establish an equilibrium. Thus there is no conflict between these concepts of dynamics and statics.

Why then not adopt the same concepts for use in social science? Doubtless something is to be said for this procedure, but a little thought shows that the concepts of physical science may become unreal and misleading when applied to social science. In the first place, physical phenomena of an inorganic sort do not go through any process of evolution. In the second place, physical science does not deal with life, or at least not with life as such. But the essence of economics lies in certain problems of life. Life, in turn, is change. Economic life is human activity. Thus it must be admitted that the concepts of physics can be applied only with allowance for a human element. While we do find conditions analogous to the statics and dynamics of the physicist, we must always allow for the probability of evolution, and the qualitative changes which may characterize it.

In economics we do study motivating forces, and we do consider such forces as cause activity (motion). Thus we have such laws as the law of diminishing returns or the law of supply and demand. These are positive, quantitative, non-evolutionary. They deal with changes, but the changes are not of a qualitative sort. Moreover, they are related to some equilibrium point or level, at least in the sense of an optimum or maximum. They may be considered as related to some test of survival or happiness or what not; but it does not seem necessary for the economist as such to decide about that. Economics is not a science of the ultimate; what "science" is?

On the other hand, "statics" in economics does not and cannot mean an absolutely fixed level in the sense of a constant and unchanging equilibrium—it does not mean a dead level. As a matter of fact, great progress of a sort has gone on under the so-called static laws of competition.

Thus it seems best to leave the term "dynamic" to the physicists, and to remember that dynamics is related to statics. Any motion

which is caused by "forces" is subject to laws of tendency toward equilibrium. So in economics, the mere quantitative fluctuations with which we deal so much of the time center in a static equilibrium. If the fundamental causes remain the same, for example, the fluctuations of the market are merely quantitative and temporary, and any equilibrium which may result while those forces are operating, is static. Equilibrium is a balance of forces at any given time.

The author's suggestion, therefore, is that economists should abandon the old arguments about dynamic economics and static economics, and that when they find it necessary to treat of qualitative changes, they substitute the word "evolutionary" for the word "dynamic." For the rest, we may do as many physicists do, namely, consider statics as including dynamics.

3. The Position of the "Institutionalist"

This conclusion is fortified by the fact that the advocates of a so-called dynamic economics usually reject the concept of equilibrium, and with it the existence of economic law. This position is apt to be associated with the idea that there are no causes or forces that are sufficiently constant to allow us to formulate positive laws which are applicable to concrete realities. For example, those who say that man makes institutions at his pleasure, and then outgrows those institutions, see nothing stable in social life. They therefore adopt what has been called by some "the experimental approach."

The gist of the matter is found in the idea of causation. Science, in its aspect of statics, deals with so-called forces which are assumed to be causal in the sense that they are conditions essential as prerequisites for the existence of certain phenomena which are regarded as results. The scientist may rely on observation. If so, the institutionalist says, "But conditions have changed, so that your experience is not valid, and we must experiment."

All this, however, raises the question, What is a successful experiment? What standards do we have according to which we may know when a thing "works"? It seems that the concept of an end is

essentially a static concept, and those who set up ideals, and make them the ends toward which economic life is to be directed, are highly inconsistent in resorting to a social "kinematics" which can have no end. In homely language, how will they know when they get there?

4. Just Criticisms of "Static Economics" in the Narrow Sense

While the foregoing is, in a sense, a defense of a scientific static concept of economics, and a proposal to limit the idea of dynamics to evolutionary change, tribute should be paid to those whose criticisms of the "static economics" of the past have exposed the dangers of such a concept. For example, it is a just criticism that a static economics may assume some conditions as being usual or natural or normal, and on this basis proceed to generalize hastily in defense of the accompanying institutions. It may be made a means of propaganda for preventing evolution.

Again, it has sometimes been eminently just to say that certain so-called static laws propounded by some economists are unreal. If, for example, we assume the existence of "perfect competition" or if we assume "equalized wages and profits," we are either deceiving ourselves or performing an act of over-heroic abstraction. It should be noted, however, that such unreality is not due to the statics; it is really a result of the over-abstraction which leaves out some of the actual causal forces. Suppose, for example, that those who hold that competition is exceptional and that monopoly is a normal condition, are right; what follows is that we merely have a different equilibrium, resulting from a different set of causes. Monopoly price would then be as representative of a static condition as "normal value" is according to the competitive economics.

Other criticisms which have been made by advocates of a "dynamic" economics center in the idea of broadening the scope of the science to include intangible, and therefore non-measurable, forces. Some would emphasize the growth of government activity and of ethical considerations. In other cases, there may be an emphasis of new or counteracting forces, as when it is argued that inventions counteract the law of diminishing returns, or birth-

control the law of population. In still other cases, the emphasis is laid on method, the critics associating statics with an abstract logic. None of these points, however, seems to merit any extended discussion. It is a matter of expediency whether we shall limit economics to a consideration of phenomena which can be dealt with quantitatively. The relative importance of political and ethical factors does not seem to change the nature of laws within the field of economics proper. The introduction of new forces involves a mere realignment which either is temporary, or results in the establishment of new equilibria. No one denies that any thinker's method may be unduly abstract.

Perhaps this discussion of the significance of the dynamic point of view may be well concluded by emphasizing the point that economics as a science is not concerned with all of life. Moreover, if it is to be a science, it must deal with goals or ends only as activity-tendencies which evolve out of individual initiative, regarding each individual as being *in large part* a given potential (desire-disposition and environment) tending toward his own goal. Thus, out of individual choices, arise values which are quantitative. When, however, the goal is chosen by some supra-individual authority, there can be no science—only a sort of art—and capricious qualitative values predominate.

III. THE NATURE OF SOCIETY AND THE RELATION OF THE INDIVIDUAL THERETO¹⁵

No sooner does the mind accept the two distinct but interrelated realities, mind and matter, than it begins to question the reality of its own individuality. Some thinkers hold that their minds are in a sense not their own, but are the results of a social process, and subordinate to social habits—perhaps a social mind. Others go to the opposite extreme and see little substantial reality in society, regarding it merely as a convenient term for summing up the motives, thoughts, and actions of individuals. Still others consider that the terms, "individual" and "society", stand for phenomena which are

¹⁵ See L. H. Haney, "The Social Point of View in Economics", *Q.J.E.*, 1913-14; B. M. Anderson, *Social Value*, Ch. IX (1911).

realities in much the same sense that mind and matter are realities. Such fundamental differences as these, must be recognized and dealt with.

In social science, the term, individual, usually means an organism which is a person. The essential characteristic of the concept of the individual seems to be revealed by the term itself, in that individual means indivisible. Thus an individual is a distinct and particular entity which cannot be subdivided without losing its characteristics as an individual. As an organism, the individual is constituted to carry on its life activities by means of mutually dependent organs.

A society, on the other hand, is a group of organisms or persons united by some common interest and having some organization. As will be seen, the reality of society lies in the element of association among individuals, based upon common interest leading to organization. It is a relationship among individuals as already defined.

1. The Organismic and Other Untrue Concepts

There are few concepts which it is more important to understand than that of society, and one of the most important aspects of this concept lies in the idea of association as distinguished from organism. Probably there is no better way to make this distinction concrete than by referring to the corporation. Many thinkers have conceived of the corporation as a true entity, and have sought to give it an individuality of its own. Relatively few, however, now accept this idea, for we are unable to find any reality which corresponds to it. As the old saying is, such a corporation has no body to be kicked or soul to be damned. The true reality in the corporation is found in the durable association among individuals which it provides.¹⁶ Accordingly, we find the same conflict of thought with reference to government or the state, and there has long been a tendency on the part of some to think of the state as a corporate entity, as appears to be the case when a President says "your gov-

¹⁶ See Haney, *Business Organization and Combination*, (3rd ed.), especially pp. 91-98.

ernment" tells you to do so and so, or when a Dictator hides behind the "corporate state" and speaks through it as if it were a mask. This is much the same thing as has occurred in the American business world when corporation magnates have sought to avoid responsibility for their acts by hiding behind the corporate entity. The corporation is real; but the individual members are also real. Neither the corporation nor the society is an organism; it is an organization.

A little thought shows one that society has none of the characteristics of a true organism. An organism involves relatively permanent differentiation and integration of interdependent organs or parts. Thus the different cells of the body are differentiated functionally. Thus, too, there is a contiguity of organic parts which is in the nature of an integration; the parts can exist only in and for the whole organism, and they are centrally controlled or directed by some appropriately differentiated organ.

Again, it is of some importance to note that organisms die—they have a characteristically limited life span. Along with this is the related fact that they reproduce periodically.

Society, however, lacks all of these characteristics of the organism. The individual persons—members or citizens—show no such differentiation as do the cells and organs of the organism. They are different, but they have no definite or fixed differentiation according to function. The individual may be a member of a society, or he can live in isolation; society is not indivisible. Finally, while the lack of any definite or final knowledge on the subject is to be admitted, it seems fair to say that the individual members of society show some independence of action—something of what has been called freedom of will.

The very fact that societies, and perhaps other associations, such as corporations, may live forever is indicative of the difference between society and an organism; and societies certainly do not reproduce in any ordinary sense of the term.

But, an emphasis of the distinction between society and organisms, by no means requires that one go to the other extreme, which tends to deny the reality of society, holding that there is

nothing real but the individual. Few if any thinkers today believe in an "economic man" who for his comfort and convenience enters into a contract with other economic men and thus forms a state. The social-contract theory of government does not represent facts. Individuals are not governed solely by reason. Social relations are not entirely conscious and volitional. Indeed, it is a point of some importance that society is not the same thing as a nation or a state; it is more than a political organization.

Nor is society a mere mechanical grouping of individuals regarded as material atoms, which are driven together by some centripetal force and controlled by natural law. To the author, it seems clear that there is no reality in "the average man", conceived of as an atom or molecule combined with other atoms or molecules into a mechanical total. The biological analogy is surely truer than this, for whatever else men are, they are living organisms.

The Reality of Society. The conclusion which seems to follow from the foregoing reasoning is as follows: Society is a group of partly independent individuals who have enough common interests to enable them to hold together in a more or less stable association, and thus involves both adjustment and cooperation. This definition is intended to emphasize the point that individuals cannot be thought of as being "units" of society in the sense in which the word unit is used when referring to physical aggregates. As already pointed out, individual organisms are at any given time essentially different, and it may be added that they have considerable capacity for change. Moreover, individuals can divorce themselves from any society. There can be no society without individuals, but an individual *can* exist for an important time without society.

Further, it is intended to emphasize the point that the essence of society lies in association, and that such association has two aspects. First there is the adjustment aspect, which is illustrated by the fact that a society cannot exist except the members thereof make some adjustment to one another. They must avoid certain anti-social actions, and it may be necessary for minorities to accept the rule of majorities to a greater or less extent. The cooperation aspect is found not only in the give and take of exchange, but in conformity

to laws and, upon occasion, in willingness to fight for the group.

Naturally, the existence of such associations is bound to modify the field of choices for the individual members, and to affect economic and other values. And the latter effect concerns not only the objective values of the market place, but also the subjective valuations made by individuals.¹⁷

2. Degree of Association the Vital Point

The nature of society, however, varies widely according to the degree of association, and one of the most significant differences in degree of association depends upon the consciousness on the part

¹⁷In practice, most individuals, while having little appreciation of general society as a whole, are interested members of some local or special social group—church, club, trade organization, or union, etc. Some economists (e.g., J. R. Commons) have criticised those who rely upon the abstract concept of general society, and have emphasized these smaller and more concrete “groups” as being the institutions which actually affect the lives of individuals. It is even proposed to make economics largely a study of such groups.

This criticism seems to be wide of the mark, however, and the proposal to emphasize special groups, adds nothing essential to the concept of society. Presumably the individual members of the smaller groups are “selected”, and thus the several groups are relatively homogeneous. This facilitates adjustments and cooperation within each special group. But, at the same time, it often makes the problem of adjustment and cooperation *among* such groups more acute. The problem of general society may become an inter-group problem. The “organized minority” and the “pressure group” are well known, and often operate as anti-social forces! Certainly, we cannot take the special group to represent the “social point of view”.

The general society rests largely upon political and economic unity, which means the existence of common or general problems of security and economy affecting all the members of the different special groups. It is these problems with which economic and political sciences deal.

One difficulty experienced by the Institutionalists is that they are unable, merely by studying the various institutional groups, to arrive at a theory of inter-group relations. In order to be able to deal with these groups, we have to break them down into individuals, and then to coordinate the motives and activities, and wealth of these individuals with the social “state” and “economy”. This is the point of view of economic science.

Economic *function* and individual motivation, it seems, can hardly be completely covered by the special-group approach.

We never have learned, and probably never will learn how to appraise the policies and activities of all the rival and conflicting special groups, either by describing them, or by emphasizing their special and local features. Only as we use such studies to understand better how individual motives work out in practice (e.g., collective bargaining by trade unions affect the objective value of labor service) does economic science benefit.

of the individuals who compose a society of the nature and importance of their association. From this point of view, one may distinguish the condition of "common consciousness" from the condition of "conscious commonness". Common consciousness implies common customs, common institutions, and much common interest and action; but if all this rests on mere instinct or habit, the individual may seldom if ever be conscious of his social relations. If one holds that society arises because man is a "political animal", he may think of society as being merely an expression of such unconscious forces, and as being based upon a mere commonness in consciousness. In this sense, an anthill would be a society. But there is a higher development of society which is characterized by a consciousness on the part of the members of their interrelations, and a will to make adjustments and to cooperate. Patriotism and civic pride may be manifestations of such a consciousness. In this case, society involves reflective choice on the part of its members, and the association rises far above the level of that found in a herd of animals. This degree of association is not to be thought of as one characterized by greater regimentation than the other, however, for while it may present greater possibility for "social action", it must necessarily involve more conscious appreciation of the differences among the members of society—their different interests, sensibilities, and capacities.

3. The Social Point of View

What, then, is the meaning of the much-abused phrase, "the social point of view"? Assuming the substantial accuracy of the preceding analysis, we may say that *a social point of view in economics is the point of view of a social individual*. In other words, it is *the point of view that will be taken by an individual who is making adjustments and cooperating as a member of the association called a society*.

Certainly this phrase cannot mean a view taken by some entity called a society. Most emphatically, no one has ever discovered anything that can be called a social mind. Nor is there any reality in such terms as social marginal utility or social value, apart from

the marginal utility or the value which is experienced by an individual.

Society can function and does function as a whole only through some leader or representative agency whose leadership or representative character is established by a process of selection. We speak of "social planning", but an examination of the working of such planning shows that the "social plan" is formulated by some individual or individuals, and may be effective only through the consent of other individuals or through the coercion of those individuals. Long experience has amply demonstrated that a government is not representative unless its decisions represent the decisions of the individuals who are its citizens.

Furthermore, social action is limited by the nature of the individual leader or representative body—the individual knowledge, intelligence, and character. And no individual leader of a society can possibly comprehend all the different individual interests of the members of his society. Similarly, no representative group can possibly form the seat of a social mind. If a situation were ever to develop in which some representative group could accurately and comprehensively represent the whole of "society", there is no probability that it could surpass the limits of an individual mind, or that it could have any greater success in controlling the material environment than could individuals.

Such being a true concept of the social point of view, how can it be made concrete by indicating some of the manifestations which may characterize it in practice? Perhaps the following points will serve to make it more definite:

(1) The social point of view will *reject anti-social courses of action*. These include all acts which tend to destroy that association which is the society, such as murder, theft, fraud, and the like.

Moreover, in connection with its rejection of anti-social courses of action, the social point of view affects the thinker's attitude towards acts in which there is no choice, and which therefore involve so-called absolute values. It broadens the scope of such absolute values so that they include not only those pertaining to the survival of the individual as a physical organism (e.g., food for the

starving man), but also the survival of the individual as a necessary part of the social group. This latter idea involves the survival of the social organization which is essential to the existence of the individual himself. Thus it touches upon political values such as may arise in case of war. It also requires a recognition of the individual as a cooperator with and an adjuster to other individuals, so that the scope of the acts which tend to destroy, and which therefore do not permit of choice or valuation, is broadened. Perhaps as good an illustration as any may be found in the field of transport and communication. It is not difficult to consider the more important devices in this field as being essential to the existence of men in society, and when so considered, the field for choice and for balancing costs against utilities may be narrowed.

(2) The social point of view will deal with the *general wellbeing* of the association or group, considering the total situation. This is the greatest-good-for-the-greatest-number idea. For example, the social point of view in economics involves the elimination of mere individual claims to wealth which cancel out when a total is struck. At least it will avoid all duplication in this respect. It will not consider credit currency as a part of wealth. "Acquisitive" acts will be considered a matter of indifference if they be not actually anti-social, since they merely take from one individual to give to another. From a social point of view, so-called "opportunity costs" must and will be regarded as significant only to individuals, and in no sense ultimate.

In this connection, the attitude toward the balance sheet item, "good will", is interesting, for may not the tendency which one notes among corporations to write down that item be a manifestation of a tendency to recognize the social interrelationship within which the corporate management functions? And if it be that this tendency is the result of competition, is the suggested conclusion any less in point?

(3) The social point of view will deal with *long-run tendencies* or with short-term tendencies as they may affect the long run. It will not be a short-time point of view. The life of society is indefinitely long, and the economist must consider not only the

immediate present, but a future which may embrace several generations.

(4) When all this has been said, however, it remains true that the test of social processes must *rest ultimately in individual well-being, though of course within the scope of the common interests which obtain in the association*. Primarily, society must be thought of as existing for the individuals who compose it. Only secondarily can we think of the individual as existing for society. At least, this seems entirely clear within the realm of economic relations. If we ask ourselves which is "end" and which "means", the individual or the society, can there be any doubt as to the answer? Of course, the mind may attempt to make a complete synthesis which would run in terms of each for all *and* all for each, but both from the genetic and the practical standpoint, we find that the individual comes first. Only by some process of coercion—which might include educational propaganda—can individual differences be eliminated so that there can be an identity between individuals and groups.

It follows that the true social point of view bans not only extreme egotism, but also extreme altruism! For example, it is easily possible for an individual or group to go so far in action designed to benefit others (or even "mankind") that he or they might be more injured than the others would be benefited. Thus the whole society might be weakened. For example, so much money might be given—perhaps in vain—to help Southern tenant farmers, that tax payers in another section would become submerged.

4. The Extremes of Individualism and Societism

The preceding paragraph, however, suggests the need of a synthesis which, while recognizing the independent reality of individual and society, will bring out the intensive and extensive interrelations between the two. No better way to arrive at such a synthesis may be found than lies in a consideration of the two extremes, individualism and societism (socialism, nationalism, etc.); for here we find an antithesis which may easily be resolved by a dialectic process showing how extremes meet.

The weakness of extreme individualism, much of which may be

found in the thought of Adam Smith and Ricardo, lies in the fact that it would treat individuals as independent atoms, and thus allow no adequate concept of society. (Indeed, those writers cared little about such a concept, since they were primarily concerned with the state or nation.) According to this individualistic concept, individuals are thought of as formed of a "common clay" and thus to have material uniformity. Accordingly, differences in wants or spirit among men are regarded as unimportant, and the subjective element in value is merely taken for granted. Again, the extreme individualist sees inevitable environmental differences, and attaches to them the greatest importance as being the chief factor which causes the development of a difference between the son of a prime minister and the son of a truck driver. Thus the individualist's problem, as he sees it, is to get the best material agencies, and to organize them most economically.

On the other hand, the weakness of extreme societism lies in treating individuals as being "articulated" and dependent members of a social organism, for the sake of which they exist. In this case, there is no adequate concept of the individual, and it may be added that probably the societist thinkers do not care much about the point. Accordingly, the extreme societist begins by seeing great spiritual differences among individuals and emphasizing the importance of such differences. He then proceeds in his thought to seek uniformity on the assumption of some doctrine of perfectibility in man, and would attain such uniformity through establishing similarities in the institutional environment. (As an alternative, however, he may forget the individual entirely by seeing no reality except some social entity or totalitarian state.) His problem obviously is to get the best leadership—say by some "brain trust"—which will provide the social planning and utilize the assumed perfectibility of mankind.

Clearly a synthesis is required—a golden mean. We begin by seeing the individual as the *primary* one of two realities, the other one being society. On the one hand, we see that individuals are different—different in physical organism and in character, as well as different in potentialities, such as responsiveness to stimuli,

capacity for improvement, and above all, *ability to appreciate common welfare* in a concrete way as involving the welfare of other individuals—say one's neighbors. On the other hand, we see individuals as having much in common, including their own organisms and emotional impulses, as well as their physical environment. They are interdependent and interrelated, both instinctively and, perhaps, consciously. Thus *society represents the likenesses and the commonnesses among different individuals*. The individual is real; so are the likenesses and commonnesses which give rise to society.

The environment both modifies the individual and can be modified by him, especially when he acts in cooperation with others. Institutions are made by individuals, but at the same time, they are a part of the individual's environment and react upon him.

There is no perfectibility of mankind; indeed, we do not know what perfection is! But "being is becoming", and doubtless improvement (let it be any sort you have in mind) can be made, although it will be limited by the different potentialities of different individuals.

The problem, as we see it from our true social point of view, is not a problem merely of getting the best material resources or merely of getting the best men; it is both problems combined—the problem of getting the best men and the best materials, and above all, the problem of making adjustments in both.

Thus men have to be considered as individuals, and society has to be considered as existing not only *in*, but *for*, individuals. Accordingly, neither individualism nor societism can give us an adequate concept, either of an individual or of a society. You ask, Where draw the line? That is the problem of value. There can be no fixed answer, just as there can be no panacea. We must learn both what we can do, and what we cannot do. And it is "we" who must do the learning.

IV. THE PROBLEM OF MEASUREMENT¹⁸

Such being the nature of man, society, and environmental relations, one question that arises is, Can the data be measured? Are economic values quantitative in any measurable sense? In short, can economics be a science? If there be an affirmative answer, the next question is, How can such data be measured? Finally, assuming some sort of measurability, it may be necessary to answer the question, Can economic values be measured with sufficient exactness to make the process worth while?

1. Measurement vs. Determination

At the outset, one should pause a moment to consider the problem of measurement in general. At once it is noted that measurement is to be distinguished both from causation and from determination. To cause is to create. we have to deal with "causes" when we seek the "explanation" of any phenomenon, say value. To measure is to ascertain the facts as to the quantity; the phenomenon having been caused, the question remains, How much? Determination goes one step further: Having caused and measured the phenomenon, or having explained why things have value and how the value can be measured, we next inquire, How was the quantity "determined"? Why does a thing have a *certain amount* of value? Thus causation deals with qualities, while measurement and determination deal with quantities. Measurement is the process of finding out "how much," and is part of accurate observation. It is essential for any dealing with quantities, and therefore is one of the bases for a science.

All measurement involves comparison; but the comparisons may or may not be standardized. Thus an individual may select a qual-

¹⁸ Cf. L. Robbins, *Nature and Significance of Economic Science*, Chap. III, T. N. Carver, *The Distribution of Wealth*, Ch. III, especially pp. 117 ff., "The Concept of an Economic Quantity", *Q.J.E.*, Vol. 21, pp. 126ff.; P. H. Wicksteed, *The Common Sense of Political Economy*, 1935, pp. 738-758; A. Marshall, *Principles of Economics* (1920), Bk. I, Ch. ii, W. S. Jevons, *Theory of Political Economy*, Introduction, and passim in Chs. III, V, VII, G. Cassel, *On Quantitative Thinking in Economics*.

ity in two objects as the basis for a homogeneity between them, and compare them on that basis. He may then say that one is twice as heavy as the other or that one is twice as valuable as the other, his statement depending upon whether he has selected weight or value as his criterion for comparison. Such measurements, however, can have little objectivity, and suffer the limitations of the subjective. They are not standardized, and lack assured continuity. In the case of measurement proper, therefore, we find another step introduced, namely the selection of some object which has the selected quality in a definite degree or quantity, and the use of it as a standard of comparison.

Thus in order to make a measurement proper, it is necessary to take four steps, as follows:

- (1) Abstract some identifiable characteristic of an object as furnishing a significant basis for homogeneity and comparability.
- (2) Adopt a standard unit in the shape of a definite quantity of the characteristic.
- (3) Compare two or more objects with reference to that standard.
- (4) Express the result as a ratio.

2. The Economic Quantity¹⁰

We undertake to measure various sorts of phenomena. In dealing with what we call matter, we measure weight or mass, and distance or extension. In dealing with what we call motion, we measure the rate of motion, or velocity. In dealing with what we call energy, we measure in terms of "force". All these measurements are objective, in that they are expressed in terms of some generally recognized standard.

There remains, however, at least one other class of phenomena which may include all cases in which the criterion or basis of comparison lies in the tendency of men toward objects, or the importance of objects to man, whether these be regarded from the standpoint of the individual's interest in the object or his apprecia-

¹⁰ Cf. I. Fisher, *Mathematical Investigations in the Theory of Value and Prices* (New Haven, 1925), Chap. I, A. Marshall, *Principles of Economics*, Bk. I, Chaps. i-ii, Bk. II, Chaps. i-ii; and the references at the beginning of this section.

tion of its fitness for his purposes. When conscious, such "importance" is felt by the individual as a quality which attaches to objects. Furthermore, this quality is one which often exists in different degrees. It thus serves as a common characteristic with respect to which objects may be compared, both qualitatively and quantitatively. Some objects may lack "importance", while others have it; and some may have a high degree of importance, while others have a low degree.

As already pointed out, human desire may be regarded as a sort of "force", and be measured in the same sense that physical forces are measured, namely by measuring relations between the objects upon which the forces play. Thus we may measure how much a man will pay for a good, and so be able to infer how intense his desire for that good is in relation to his desire for the good he offers in exchange.

(1) "*Means*"; *Direct and Indirect*. Such quantitative importance arises out of the significance of objects when thought of either as standing in the line of a desire tendency or as gratifying a desire. In this sense, the object of desire is often thought of as a "means", with desire (or its gratification) as an "end". But in economics, within the limits of a social point of view, one end is as good as another, and the problem of choice concerns only *the way* to the object, or the means. (This is often confused with the object itself.) Thus there is involved a relation to "ends", but the economist leaves any problem of choice among ends to the ethicist, political scientist, or others. Such choices are necessarily qualitative. Measurement does not concern qualitative values, or choices among ends, for they seem to reduce to subjective valuations, for which we can find no standard or basis of comparison.

It is also necessary to note that in measuring the importance of objects regarded as means—that is, from the standpoint of their relation to men's desires—we find that some are directly related to desire, while others are only indirectly so related. This makes the difference between the problem of measuring direct "consumer goods" and that of measuring indirect agents of production, such as land and capital goods.

(2) *Subjective vs. Objective.* Furthermore, we may conceive of measuring the importance of objects either in subjective terms or in objective terms. Thus, as an individual, I may subjectively compare two objects directly, and arrive at some conclusion as to their relative importance to me; but there is no standard except my own feelings. I may feel differently about them at any moment. Or I can compare two or more objects indirectly by relating them to some third object which I accept as a standard. Here again, however, the standard is good only in my mind, and is thus merely subjective. It is true that if the third object be the thing we call money, my standard may be influenced by some objective system of prices which obtains around me, but it is still a subjective exchange value that is involved in my comparison.

Such subjective measurements are good only within the individual mind, and individuals differ, so that there is always the question whose feelings, desires, and judgments are the most important ones. While utility may be thought of as a quality attached to objects by subjects, and one that exists in degrees (marginal utility), it remains true that *my* marginal utility can not be directly compared with *your* marginal utility. Nor do we have any psychological stethoscope or thermometer by means of which we can observe or measure "psychic income" and "psychic outgo" (cost). It should thus be clear that we can not take subjective valuations or wants or pleasures as the sole basis of economic measurements or economic science. The subjective element is vital, and there would be no economic value without it; but, while recognizing its importance in *causing* value, we must recognize the futility of relying upon it for measurement.

Yet we can and do find measurements being made—objective measurements of the importance of objects to man. Thus my individual subjective value may, by social processes, be compared with the individual subjective values of others, and this is what goes on when two individuals make an exchange of objects. By a process which will be analyzed fully, free exchange between individuals gives rise to objective values which can be measured. Such objective values are the field of economic science.

It is hardly necessary nowadays to point out that objects have no 'intrinsic' value, and that their importance varies according to the attitudes of different individuals, to say nothing of the differences in the attitudes of a single individual at different times. It does, however, seem necessary to emphasize the point that the *importance* of objects can not be measured in physical quantities, as in pounds or feet. Of course, objects themselves do *condition* importance, and do differ in importance on account of being abundant or scarce, near or remote, direct or indirect, easy of acquisition or difficult, etc. But even these differences, while they affect what we may call the "fitness values" of objects, and costs, do not correspond to physical quantities. In other words, when we are measuring the value of objects, we are not measuring merely the objects themselves.

For the measurement of objective economic values, therefore, we must adopt some means which will embrace both the tendencies of the subject and the fitness of the object. Even if we start with marginal utility as being a degree of desire or importance, we find the same two aspects. Marginal utility may be thought of as related to the fitness of objects for human tendencies, and some economists, in stressing scarcity or *rareté*, have leaned toward an emphasis of this aspect. On the other hand, marginal utility may be thought of as an 'interest value' pertaining to human wants. In reality, it must be thought of in *both* ways, and presents two interrelated problems.

- 1) The reality of the object requires that we make our measurement with relation to some units of physical quantity. Somewhat as in the case of "specific gravity" as a physical measurement, so measurable economic value is always related to a given physical volume of one good, which may be compared with a given physical volume of some other good taken as a standard unit. In dealing with indirect goods, the technological and instrumental point of view must be taken. We have to consider the physical nature and limitations of objects as affecting both desire intensity and aversions or costs.
- 2) Unless we are to consider objects as dictating to subjects, however, it is equally necessary to measure importance with due regard to the difference in individual dispositions and tendencies toward

objects. There can be no common denominator which does not allow for this aspect of value.

The great truth, then, which lies in objective exchange values—and the great merit from the point of view of both science and the problem of life—is that they enable us to measure conjointly both utility and scarcity, positive desires and negative desires or aversions—both the interest of the subject in the object and the fitness of the object for the subject. Such values also enable us to speak of “social value” in the only sense in which such a value is real, namely in the sense of an objective value which is the synthesis of individual subjective values.

Obviously, by adhering to the test of measurability in terms of objective exchange value, we are compelled to eliminate from consideration many phenomena, some of which we feel to be of great importance. Such are the numerous intangible spiritual factors in life. A poet may say that the price of virtue is above rubies, and similar observations may be made concerning many ideal objects or human characteristics and social customs. Nevertheless, these things cannot be true with the definiteness and generality which are characteristic of scientific law. Surely, therefore, it is better to select those phenomena which can be so treated, and to build our science upon them, rather than to forgo the analysis and even the abstraction which are involved, and thus deprive ourselves of any of the important standards of truth which economics as a science may provide.

3. “Wealth”

When one looks at the matter from the foregoing standpoint, the old controversy about the nature and definition of “wealth” seems to be easily settled. *Wealth consists of goods which have measurable economic value.* More precisely, *wealth consists of all scarce goods that have a relative importance which is capable of objective measurement.* It is measured in terms of objective value, for the reason that the concept is based upon the importance of goods to man in society, insofar as the importance is determined by perceptible degrees of desire and resistance to desire gratification (costs

and scarcity). By means of free and open exchange, all goods which are "wealth" are arranged in a generally recognized scale of relative importance.

Thus wealth ties in with economic motivation.

Other objects, including various intangibles, such as culture and objects of personal worth, may have values of one sort or another. Since their values cannot be measured objectively, however, they afford no basis for a science, and least of all for a social science.

The requirements for the most important and expedient concept of wealth are, therefore, as follows: (1) Definite appreciability by two or more persons at the same time, since otherwise wealth would include objects of incommensurable individual appreciation whose value would often have to remain purely subjective. (2) Comparability in terms of degree of desire (derived from common wants) and physical limitations. (This involves a definite relation between the degree of desire and the physical quantity of the good.²⁰) (3) Standardization, in the sense of being comparable as units in quantitative terms, with reference to some standard unit. (4) Transferability; for this enables the establishment of generally recognized, and therefore objective, value relations—values that have an objective validity. (Incidentally, transferability reacts upon the individual's appreciation of goods, and may increase the scope of the wealth category at the same time that it eliminates some objects therefrom.) (5) Some degree of appropriability is implied; but this need not require the existence of private property rights in the sense which is characteristic of a "capitalistic" economy.

4. "Services" Distinguished from Commodities

One question which naturally arises at this point is that concerning the difference between commodities and services. Both are

²⁰ An interesting distinction may be made as to "maintenance services" which, like laundry work and shoe shining, serve to keep valuable commodities in usable condition or to preserve them. If an inventory of a nation's wealth were taken, the *condition* of its stock of clothing, etc., might be a factor. It is doubtful, however, that even this would give the services as direct a relation to objective values as in case of ordinary factory labor; since such commodities as clothing and shoes, being fitted to the person, have greatly limited transferability.

"goods". Should services, then, be included in wealth? This has long been a point of difference of opinion among economists, and since it presents a problem which concerns the measurement of economic quantities, should be considered here.

Two sorts of economic services may be distinguished:

(1) Some services are embodied in external goods to which some form of utility is added. For example, the services of the cook appear in the meat, and the services of the laundress appear in the laundered articles. Perhaps it may be said that even the services of the lawyer often, though not always, appear in claims to tangible property of some sort. There are two classes of these "material services": (a) Those which are embodied in transferable²¹ commodities, such as home-made pies, and (b) those which are embodied in non-transferable commodities, such as personal articles which only one known individual can use, or public "improvements" in rivers.²²

In addition, there is much difference in specific and definite relation between "material services" and the products in which they result. Sometimes it is relatively easy, in theory at least, to isolate the exact product attributable to an individual's service; but in others, it may be practically impossible to do so. How much electricity is produced by the man who washes windows in the office of the president of an electric utility corporation? The importance of this point lies in the difficulty of determining the economic force of demand for labor in such cases as the latter.²³

(2) On the other hand, there are services which are not embodied in external commodities—the more "personal" services. Some of this second group of services may provide conditions facilitating the functioning of individuals as producers, such as light and heat and cleanliness. Others may result in visible material changes in the body of the consumer, either externally as do the services of the

²¹ Not necessarily "salable", and certainly often not for sale.

²² Might also include illegal goods and "free" goods.

²³ It may well be that in such extreme cases, the so-called wage should frankly be regarded as economically indeterminate, and that economists should merely accept the explanation that the payments made are governed immediately by the wages paid in apparently similar occupations in which the value of services can be objectively determined.

barber, or internally as do the services of the surgeon. Still other services of the second class are not embodied in any material form, but consist of fleeting feelings or sensations which are without apparent material result. Such is often the case with the services rendered by the musician. Finally, we may distinguish social or governmental services such as are rendered by government officials, police, etc.

From the economist's point of view, this classification has importance, for the reason that those services which are embodied in external goods have some more tangible basis for measurable valuation, particularly when those goods are transferable—the “vendible commodity” test proposed by Adam Smith. No one may deny that the pie baked by the household cook is “good”, but it does not undergo the objective test of importance that a similar pie does which is produced by the commercial baker. In the latter case, the pie must “pay”(1), and by the same token one can know whether it does “pay” or not.

When we pay for service, we seem to pay for human activity (perhaps assisted by other agencies); but even so, we do not pay for the activity as such, but for tangible or intangible results which flow therefrom. For example, labor, as such, has no measurable value. When a personal service is bought, it is not on the basis of an objective relation between means and end. The knowledge I buy from the teacher, or the health from the physician, or the aesthetic pleasure from the musician—these are all personal and non-transferable. They are not embodied in units of an object which can be compared with a standard unit on the basis of importance per unit. Even when a personal service is associated with some material result, the valuation of the service in that connection is apt to be subjective and based more largely upon the *quality* of the result (the cooking, the concert, the shoeshine, the haircut, the medical treatment) than upon any measurable quantity.

Of course, too, the personal equation enters into the valuation of services as a more essential factor than is usually the case in dealing with commodities, and economists have always noted this fact as distinguishing the service. In other words, more or less close human

relations are involved in the rendering of services, many of which we refer to as "personal services." Since persons are not subject to property rights, except under slavery, the personal service cannot receive the same market measurement that a machine does.

Again, services either pass out of existence immediately as they are rendered or performed, or they become an inseparable part of the person or of some commodity, in which they are embodied. Thus it is hardly possible to measure them. Obviously, it is quite impossible to store them apart from the product, or to make an inventory of them.

Finally, we note that prices paid for personal services, in most cases at least, are not related to the costs involved in making the service available, including the difficulties overcome in acquiring the required capacity. (Such costs are too subjective and interwoven with non-economic considerations to be measurable or to serve effectively in adjusting supply to demand.) In actual practice, the rates of charge in the case of legal, medical, and economic advisory services, for example, are not definitely determined or standardized. How can they be, when they have so tenuous a relation both to cost and to final result?

When all is said, one can hardly escape the conclusion that the service is so different from the commodity, as to require some separate treatment. Important as services may be—and the services of the physician, for example, may have an absolute importance—it does not seem expedient to include them in the concept of wealth. This further emphasizes the extent to which we narrow the scope of economics when we consider it as a science based on measurable quantities. We do not include, for example, the appearance of the person, or the feelings or sensations of the consumer, as forms of wealth. But the omissions are smaller than might seem, for such things often affect the efficiency of labor or enterprise, thus finding expression in production of commodities. And the bulk of services are represented by the valuable transferable objects, wealth, to which they contribute.

5. Limitations and Advantages of Measurements in Terms of Exchange Value

The foregoing discussion suggests the limitations of exchange values as measuring the importance of objects for human purposes, and nothing is to be gained by denying or belittling these limitations. Every economist is fully aware that the "prices" paid for goods are not in any precise sense *equal* either to the utility of those goods to the buyer, or to the disutilities which the seller may have undergone. Every economist, moreover, is keenly aware that "expenses" paid are not in any precise sense equal to the costs undergone by the agents of production. Nor is any extended discussion necessary to explain these statements. We merely observe that some of the chief reasons lie in the following: ignorance, particularly as to costs of production; impulsive action, notably in the case of procreation as affecting population and wages; exploitation, as by a monopoly in the production of some necessity of life; government interference, which so frequently subordinates economic values to political values (or to mere politics); inflation, leading to movements of prices which leave wages behind. In short, objective values may not in fact be what they would be under "perfect competition". One could give numerous other illustrations; but suffice it to say that, while exchange value is the most expedient means of measuring economic importance, not only are there other importances than those economic, but also the nature of exchange itself is such that the primarily economic considerations may work out imperfectly or be misdirected.

When all is said, however, neither utility nor scarcity nor cost, taken alone, can give "importance" to any object. None of these alone can give value. Accordingly, the only feasible *measure* is found when individuals are free both to buy what they desire, and to produce what they can exchange for enough to enable them to pay the expenses which they incur. With demand and supply of this sort, we get some tendency toward a balance between (1) utility in consumption and (2) cost in production. Thus we find in objective exchange value, the possibility of a combination measure of

the subjective aspects of demand and the objective aspects of supply. It gives us *the only known way to appraise the economic importance of objects in a manner that allows weight to all elements in economic life*, and that without subordinating economic value to non-economic considerations.

Most economic goods are material objects or may be represented by such objects. From the standpoint of welfare, the problem of economic life is one of adjustment to a limited environment; and *one of the strongest arguments for limiting the wealth category*, is that this procedure helps us to understand the problem of economizing scarce goods. Neither the Communist economy, with its proposed equal distribution of such goods, nor the Fascist economy, with its regimentation for the strength of the state, can be defended on scientific economic grounds. Under a competitive price system, however, with the test of wealth in objective exchange value, economic science can explain how production is directed toward goods which, with due regard to costs, are at the given time most important; and how motivation tends to afford the maximum supply of such goods.

But such a treatment limits the scope of "economic life": the economist must know that his "wealth" is not equal to "welfare". This should make him both more humble and more self-assured; for he will see the need of cooperating with other social scientists, but will be able to speak more definitely within his own field.

6. Kinds of Goods as Affecting Value Measurement

When we come to the practical problems of measuring value, we find certain important questions arising from the existence of different classes of "goods", such as durable and transient goods, direct and indirect (or instrumental) goods, fungibles and non-fungibles, tangibles and intangibles, etc. The problem, of course, is to measure *value*; but we always find objective value attached to some object or good, and in measuring value we therefore have to measure goods also. Of course, the amount of value is not in proportion to the quantity of the good; indeed, it may vary in the opposite direction. But it is equally obvious that if there were no goods, there would

be no value, or if the goods were not "fit", their value would be proportionally small. It is just as true, moreover, that the quantity of goods is not in proportion to our desires—but is dependent upon environmental and human limitations—as it is that value is not in proportion to the quantity of goods. In short, the problem of measurement must be concerned both with objects and with subjects, and in certain respects, to be discussed here, quantitative differences among objects are essential factors in explaining differences in their values.

Some thinkers are apt to forget that objective value, like the physicist's "specific gravity", is always "per" something—per quantity unit of some object—and this is even more obvious when values are expressed as prices, for prices are always per pound, per yard, or per piece. No matter how "humanitarian", our comparisons of the importance of goods cannot be disembodied.

In the case of direct goods or consumer goods, all this is generally taken for granted. This is true because such goods have an obvious homogeneity in their direct relation to consumers' wants, and have in common a similar sort of direct fitness for gratifying such wants. Mostly they are exchanged in markets, so that their values are easily recognized by a group, and thus objectively accepted.

(1) *Durable and Transient Goods*.²⁴ Even among direct or consumer's goods, however, durability affects measurement, and in the case of indirect goods it is a matter of much importance. Thus the element of time enters our measurements. First, it is durability which is the primary basis for separating the use of a good (say a house) from the good itself, or from its cost, or from the ownership thereof. When a good is "used up" as soon as it is used (say coal), and thus ceases to exist, such a separation is not possible. (This leads to the distinction between "fixed" and "circulating" capital, the latter being indirect or instrumental goods which pass out of existence as used.) When a good is durable to a certain degree, the anticipated prospective uses or income can be made the basis for a process of

²⁴ Often confusion of thought arises by contrasting durable and *perishable* goods. The matter of perishability, however, has little fundamental significance in this connection, except for its effect upon elasticity of demand, etc. (See below, p. 318)

capitalization by which the value of the good is estimated. Here, however, the *degree* of durability makes a difference; and this is clearly reflected in the different effects of a change in interest rates upon the valuation of goods which have life periods of different lengths.²⁵

(2) *Fungibles and Non-fungibles*. A good is "fungible" when it is available in units which are accepted as equivalents, such as standardized grain, money, etc. Thus, if one be measured, all are measured. If the good be exchanged, it is apt to be mixed with others, and lose its identity. Thus "fungibles" are not rented; for specific delivery is impossible, and use involves ownership. It is the case of non-fungibles, therefore, which requires most attention.

Even in case of direct goods, if they be durable, non-fungibility adds an important characteristic, namely, "*rentability*". Each good of this sort has an identity which endures, and it can thus be "hired" or "rented" for a period of time, the use being paid for, while the title to the good is not involved. Moreover, it may make no difference whether the good be capital or a consumer good or land. Thus in the case of houses, saddle horses, pleasure boats, or dress suits, a consumer may secure the *use* of the non-fungible good without securing the ownership or control of it.

Thus, in the case of non-fungibles, there may be two individual interests in the good: the producer or owner, if there be one, is primarily concerned with the cost or value of the *good* as such, while the hirer or user is concerned with the value of its *use*. As a result, we can think of and measure the value of such goods in two ways: we can think of it as (1) the sum of their "use values"; or, if we think of the goods as objects which are owned, we can consider their value to be (2) their "cost" to the owner or the prices paid for them. In case there be no private property, we may consider the good either from the consumer's standpoint as a sum of uses (utility) related to desires, and varying with desire-intensity and the life of the good; or we may consider it from the producer's

²⁵ Though not a matter of measurement, durability has an important effect upon the rapidity with which surplus stocks of goods are reduced to requirements, as is seen in periods of business depression, when transient goods (lasting say less than a year) more quickly find a renewed demand.

standpoint as a sum of costs of all sorts which are involved in supplying its uses over the period of consumption.

Even in this case, we are apt to find confusion in thought arising from a false separatism. After all, the "use" of the good depends upon and is limited by the nature and quantity of the good itself—its fitness value. In fact, from any point of view, the fitness of the object can never be overlooked as an essential factor in its value—their abundance, ease of acquirement, divisibility, and consumability.

Thus the distinction between fungibles and non-fungibles is apt to be tainted by an overemphasis of the so-called individual point of view, in which the existence of ownership or property rights is an essential element.

(3) *Indirect Goods.* In the more complex case of indirect or instrumental goods—the economist's "factors of production"—we have a double problem of measurement, or two separate problems. Both the instrument and the products to which it contributes, are involved; and as these are not homogeneous, or at least are characterized by much greater differences than in the case of either considered alone, the problem of measurement is different. In this sense, we find a situation similar to that which exists in the case of non-fungible consumer goods. (Accordingly, we find the tendency to confuse private acquisitive capital with socially productive capital goods.)

In fact, the more general point is that indirect or instrumental goods, not being wanted for themselves, have no value at all except as they contribute to the supply of direct goods which are their "products", and the value of these direct goods is imputed to the instruments. (This is what makes objective measurability so important in the case of "products", and leads us to exclude "services" from "wealth".) Therefore, to measure the value of the product would seem to be equivalent to measuring the value of the producers' goods, or rather, perhaps, the value of the services of such goods. And apparently this is true, whether the producer's good be fungible or non-fungible. At least one thing is certain, namely that we cannot measure the value of producers' goods before that value has been caused by their functioning in production, and has been

determined by what will later be described as the forces of demand and supply for their products. If we seek to measure such goods as land and capital instruments as though they existed in the form of a predetermined "fund of value", we are begging the question.

In measuring the value of instrumental goods, it is necessary in some way to recognize that the desire for them and their utility depend upon their technological "efficiency" in processes which we call production, and which result in finished goods. This involves material results, and requires time and the sacrifices which attend the passage of time. The indirect goods or agents or factors are themselves material objects, and as such have the differences which characterize such objects—differences in abundance, in availability in time (capital goods), in availability in space (land), and in relation to the human element (labor). Any exchange value they may have, derives from their capacity to produce net utility, but this capacity itself depends upon technical efficiency. We cannot forthwith assume the supply of the factors of production. We cannot assume that value units, in the sense of "number of dollars worth", are the same thing as number of "productive units", in the sense of number of units of physical product. After all, the factors of production produce *goods*, not *value*.

After value has been imputed to it, an indirect or instrumental good can be measured in terms of value. In this respect, all goods, whether direct or indirect, are alike. But measurements of value are subordinate to the problems of the causation and determination of value, inasmuch as we have to measure the forces and the quantities of objects which function. The indirect goods or productive instruments are objects. Costs are involved. The values of such goods are indirect, the demand for them being derived from certain quantities of products which result from their use.

Thus in the case of productive agents, it is also important to remember that value is "per" some physical quantity or unit of the "producers' " good, and that we can not measure except with relation to acres, square feet, machines, units of physical "capacity", or units of cost (also per physical unit). We must remember that production depends upon the nature and technological functions

of production goods, and upon their physical supply as affected by their producibility.

In turn, producibility is affected by cost, which makes possible a separate "cost value". This tends toward a condition of standardization, and therefore of fungibility, which also makes it possible to have a "value of the investment" that is separate from the value of the "use".

These points arise in connection with the measurements of such productive agents as "land" and "capital". Land, as will be seen, is not only non-fungible, but its nature is essentially bound up with location and extension. In other words, each piece of land is different from any other pieces, and is identifiable, so that the value of the physical good is measured separately from the value of its use. At the same time, its quality of extension and location gives such homogeneity that it is possible to measure land in terms of units of extension (area and distance), and is so important that we do so measure it. The value of land is always, and of necessity, expressed as being per acre or per foot.

In the case of capital goods, we find instruments which may or may not be fungible—so-called fixed capital is often non-fungible, while so-called circulating capital is generally fungible. But, as a "factor of production", the technological nature of capital goods is an essential matter, and when we examine such goods, we find no such homogeneity as exists in the case of land. They all occupy space, but are not space. They include horses, machine tools, factory buildings, and stocks of canned goods, and obviously such different objects have no physical homogeneity such as would enable us to measure them in physical terms. Accordingly, we do not so measure them.²⁰

On the other hand, capital goods, being producible, do have a common element of cost, as a result of the expenditure of human sacrifice and effort which is required that they may exist and function. Thus the tendency is to measure capital goods in terms of "cost of investment"; and there results a further tendency, which is

²⁰ As we shall see, however, there is an important field of development possible in this respect by reducing capital goods to terms of energy potential.

subject to abuse and full of logical danger, to think of capital goods in terms of some estimated value, and to consider capital itself as being a fund of value. Economists who yield to this tendency may seem to simplify the problem of measurement,²⁷ but they do so at the expense of reality.

7. Significance of Time in Relation to Economic Quantities

At several points above, reference to *time* has been necessary, for obviously both durability and indirectness are concepts which involve time. Indeed, economic quantities and their measurement are necessarily related to life, and life is a matter of changes during a period of time limited by birth and death. Wants, production, consumption, activity—all these occur in time, and can hardly be understood except as “rates” per unit of time. Thus the problem of equilibrating production and consumption is a problem of equilibrating a *rate* of production with a *rate* of consumption—per day, month, or year. As Jevons and others have pointed out, even marginal utility is to be understood as the result of mass, want, and time.²⁸

Much as values are always “per” some physical unit of an object, so all income and outgo are “per” some unit of time. All concepts of energy, work done, enjoyment, and the like, are “rates”—e.g., man hours, annual rental per acre, wage rate, etc. The concepts of diminishing returns and increasing returns must be based upon cost per unit of product per unit of time, and the *rate* of production per day or year is involved in the concept of large scale vs. small scale production.

From this general fact, there arise problems not only as to durable vs. transient objects, but also as to uniformity and equilibrium. For example, the phrase “at any given time”, or its equivalent, is commonly used to introduce statements of economic law. This is necessary, for one reason at least, because in human life time means change, and with man, change often means qualitative differences

²⁷ Incidentally, they easily take up with the notion that money need have no objective exchange value, assuming a fiat value or one based upon custom.

²⁸ W. S. Jevons, *Theory of Pol. Econ.*, 4th ed., pp. 61-69.

which greatly complicate the problem of measurement. In some cases, it may be impossible to assume "other things remaining equal" unless it be required that the observation be made at a given time. (Such is the case with the law of diminishing utility.)

Again, the problem of equilibrium leads to a consideration of long-term vs. short-term conditions. This comes close to being the only aspect of time which seriously concerned Alfred Marshall; and he was led to make too great a distinction between long-time and short-time conditions affecting value.

It seems, however, that there is only one way to deal with the time factor that is involved in measuring economic quantities. This way is (1) to consider objective value as pertaining to the number of units of objects which exist *at a given time*, and (2) to consider those units as being demanded and supplied by subjects (buyers and sellers) whose activities are correlated on the basis of units of motivating force per unit of product *per unit of time*.

Thus, on the base line, or OX axis, of our diagrams, we measure units of product at the same time that we measure units of work done by labor, capital, land, and enterprise to produce those products. All these can be correlated in terms of units of work done by energy, which means that time is allowed for. Necessarily the products have a history which covers labor time, capital time, land time, and enterprise time. But we consider the market forces *at a given time* with reference to the product units then available. The demand and supply "curves" are not historical time series. They are intensities, or quantitative expressions of choices (bids and offers) measured on the vertical scale above the base line (OY axis); and they are valid and commensurate because they represent tendencies existing at a given time.

8. "Social Values"

The problem of measurement involves and throws light upon the distinction between individual and social values.

Of course, one could mean by "social value", any value that depends upon exchange; for exchange involves a relationship between two or more individual persons who may be thought of

as the members of a society. Such a simple concept of social value would agree with the Classical economic concept of objective values, and such social values could be measured. But ordinarily something more than this is meant: When one speaks of social values, one is apt to imply some over-individual process of valuation, involving either an organismic concept of society, or some collective action in the way of price fixing.

If we regard society as an organism which dominates individuals and which is able to carry on an organic process of valuation, it seems that we are estopped from any quantitative measurement of value. There would be no comparisons, and certainly no individual choices. A social value in this sort of a society—assuming that it could exist—would be a sort of super-subjective value felt by the social organism in much the same way that an individual person has subjective values.

If, however, society be considered as a mere political organization similar to the nations or states which we observe today, we may find cases in which price fixing occurs, and it may be thought by some that such prices represent a sort of social value. In this case, however, some authority may coerce individuals to use the goods for which prices are fixed in certain relations, and the individual's purchases are a function of (1) the fixed price and (2) his personal demand price.

Here, too, the matter of measurement is particularly interesting. One may well ask, what would we use for money? In order to measure objective values, we have to have an objectively determined value expressed in some unit of measurement, or standard; otherwise we cannot really know what the fixed price is, or even make it stay fixed. To fix prices or force values on commodities, is much the same thing as to issue fiat money. In either case, we lack the basis for objective measurements.

Incidentally, also, we note that exchanges are restricted, and especially exchanges which involve either international trade or the lapse of considerable periods of time. Such restriction is probably increased by the fact that arbitrary action in fixing prices, either for commodities or money, introduces an element of differ-

ence in subjective attitudes of individuals. In the case of money, for example, some men are more suspicious or cautious or shrewd than others, and their appraisal of the relation between money and commodities will be more objective than the appraisals of others.

The up-shot of the matter is that, from the standpoint of economic science, no consideration need be given to the organismic concept of society or to the processes of price fixing by government authority. By "social wealth" will be meant those goods that have a value which is arrived at objectively through free exchange and which therefore can be measured as a quantity.

No doubt, however, there is also good reason for speaking of the "wealth of a nation" or the "wealth of a society", meaning the objects which, while not immediately appreciated by the individual and not subject to individual appropriation, are appreciated by such representative bodies as legislatures and by the more public-spirited and far-sighted citizens as being of importance in the life of the group.

9. Summary

The gist of the foregoing discussion of measurement in economics is the conclusion that it is essential to deal with measurable quantities if we are to make economics a science. This conclusion is one basis for limiting economics to those phenomena which can be tested by measurement in terms of objective exchange value. Thus it leads to limiting the scope of economics, and to the adoption of a narrower definition of "wealth" than many economists have desired.

As scientists, we can not substitute measurement for causation or determination, as those do who take the value quality for granted, and give no consideration to the forces upon which the existence of value depends. Economics, as a science, must deal with the determination of value, and therefore with the relation between causal forces and result; but such considerations require measurements that are applicable both to cause and to result. In order to measure, we must have some standard that has the same quality as the thing measured, and the quality of value depends upon the causal forces.

We can measure objectively the value of only those things whose value can be explained through processes of exchange, remembering that such processes generally take us back to the nature of the physical environment with its various materials and forces. Then we can objectively impute values to services and to agencies of production, when they result in products which have an objective exchange value; and, having imputed value to them on that basis, we may measure it.

V. MARGINS, SURPLUSES, AND DIFFERENTIALS ²⁹

Economic values are made definite and real by going to "margins", where an equilibrium of value-determining forces exists, and the importance of some object with relation to desire, is brought to a focus. Economic science was long hampered by an absence of the concept of the margin, the result being that economists attempted to deal immediately with totals and averages. This meant either an impossible or an unreal procedure. One has only to reflect how unreal an "average" may be, to recognize the difficulty of the situation.

I. The "Series"

Nowadays, the economist deals with groups of interrelated and measurable data; and he starts by considering that men and goods exist as series of items, which items, regarded as concrete objects, are often called "units". When the economist considers a series of individual laborers, acres of land, or pounds of goods, as consisting of "units", however, it is not to be supposed that he regards them as being equal in all respects. One of the most important phenomena which economics has to consider is the existence of *differences* among individual men and among individual productive agents. In order to make the significance of this matter clear, we may distinguish two kinds of series:

(1) There are homogeneous series of "units" of goods which in themselves are physically equal for all practical purposes, as for

²⁹ P. H. Wicksteed, *The Common Sense of Political Economy*, 1935, pp. 401-138, 39ff., 360ff.

example, bushels of No. 1 red winter wheat or pounds of electrolytic copper. Such a series constitutes an aggregate of fungible units, any one of which may be taken as representative of the others.

In this case, differences in importance (and differentials) arise as the result of differences in number of units in relation to human desires in consumption or production—differences in the tendencies of consumers or producers toward the available quantity of goods. Thus diminishing utility *tends* to occur when the number of the homogeneous units in a series of consumer goods available to a given consumer is increased. Diminishing productivity *tends* to follow an increase in the number of units of any agent of production, and results in a change in an enterpriser's tendencies in directing production.

(2) There are heterogeneous series of "units" of goods or persons, the so-called units not being equal in quality or in capacity to yield gratifications. They may fall into groups or classes which are more or less separate and "non-competitive"; or they may all form a fairly continuous series with small and regular differences among the "units".

In heterogeneous series of this second kind, the differences are "inherent", in the sense that no unit can represent the others as an equivalent.

Probably there is too much of a tendency in economic thought to consider so-called "units" of the heterogeneous second class as equal, notably so in the case of human individuals, whether these be regarded as consumers or as laborers. As a matter of fact, we know that great differences exist among men, in capacity both to feel or enjoy and to act or produce. For these, and perhaps other reasons, differences in purchasing power arise—to say nothing of bargaining power. So, too, with land: no two land "units" have the same location, and hardly any two the same net yield capacity.

Accordingly, our economic "units", whether subjects or objects, fall into series, the most important aspect of which is *difference*. The difference may lie either in the individual's appreciation of or tendency toward the physically equal units, or in the incompletely

identical "units" of the good. The units, if they are in a series, must have the same quality or kind of importance, but in different quantity. And accordingly, we may think of them as arranged in the order of magnitude, or according to degree of difference in importance. (For the present, we will assume that some process of free choice works toward such a result.)

2. The Margin as a Threshold

Then there must be some upper and lower limits to the importance of the units—a most important and a least important unit in the series, or a maximum and a minimum in the total importance of the series—which characterize any given situation. Between these limits lies the field of economic value. These limits, or thresholds of importance, are "margins", or at least potentially so; that is, they are limits beyond which economic use or value does not extend, because either the number or the quality of the units deprives men of choice. For practical purposes, however, economists in speaking of "the margin" usually refer to the *lower* limit. This is the margin of importance beyond which a utilization or use of the good or agent in question, is not considered worth while. In short, in economics "the margin" concerns, or is connected with, the least important use of a given number of units of some good, either for consumption or production—whether as direct or as indirect means.

The classes of margin distinguished by economists are as follows ⁸⁰:

⁸⁰ For the benefit of the less advanced student, the several items in this classification may be broadly, loosely, and tentatively defined as follows.

"*Marginal utility*" = the degree of an individual's desire for a given good at a given time, best seen in the intensity of his desire for an additional unit of the good; "*marginal bid*" = the lowest effective bid in a series, the one which would first become ineffective as a result of a rise in price; "*marginal cost*" (*disutility*) = the cost per unit of a good which is just balanced by the marginal utility; "*marginal offer*" = the highest effective asking price in a series, or the one which will be first excluded by a fall in price.

"*Marginal unit of a consumer good*" = last of a series of units consumed in succession by a given individual, who is assumed to remain unchanged except for a decline in desires for the good in question, "*marginal consumer*" = the one in a series of the consumers of a given good, whose desire for that good is least intense; "*marginal buyer*" = the one in a series of buyers of a good

I. SUBJECTIVE MARGINS:

1. *Utility*:
 - a. Marginal utility.
 - b. Marginal bid ("demand price").
2. *Cost*:
 - a. Marginal cost (disutility)
 - b. Marginal offer ("supply price").

II. OBJECTIVE MARGINS:

1. *Consumption*:
 - a. Marginal unit of a consumer good.
 - b. Marginal consumer.
 - c. Marginal buyer.
 - d. Margin of consumption:
 - (1) Individual.
 - (2) Society.
2. *Production*:
 - a. Marginal unit of an agent of production.
 - b. Marginal enterprise.
 - c. Marginal seller.
 - d. Marginal product.
 - e. Marginal expense.
 - f. Margin of production:
 - (1) Individual.
 - (2) Society.

3. The Futility of Totals and Averages

In all these cases, the margin is the degree of importance of a total, in terms of all the value-determining conditions. The margin results from all the conditions affecting value, including the total quantity of the good in question. The total, however, is only one

whose bid or demand price is marginal (see "marginal bid"); "*margin of consumption*" of an individual = a sort of average of all his marginal utilities in consumption, or the level of his unsatisfied desires.

"*Marginal unit of an agent of production*" = least productive unit of a given factor of production actually used, "*marginal enterprise*" = the least productive business enterprise which can yield a competitive profit, "*marginal seller*" = the one in a series of sellers of a good whose offer or supply price is marginal (see "marginal offer"), "*marginal product*" = the unit of any produced good, the income from which just balances the outgo required to produce it; "*marginal expense*" = the sum of money expended in producing the marginal product—the expense which just pays; "*margin of production*", individual = the maximum point to which any individual can expand production without loss—the point in the utilization of the factors of production beyond which it does not pay to go, since costs would exceed utilities or expenses exceed sales.

of several elements. Thus it may be said that it is upon the margin that the total generally depends. Why the total is what it is, is a question. Totals of commodities or services generally have to be explained. They are produced or, at least, are conserved, and the margin is the decisive point in these respects; it represents the difference in importance between the existing total, and some other total.

Futility and unreality have always marked the attempts of economists to construct a system of economics on the *assumption* of total production and total income. When there is the further attempt to divide the assumed totals by the number of persons, the stultification is complete, for persons are not units in the logical or mathematical sense.

If, in time, differences among producers (or agents of production) and among consumers are eliminated by competition, or otherwise, then the difference between margins and averages may cease to exist. Even so, however, the way to describe the situation would be to say that the average had come to equal the margin. Certainly, there can be no presumption that a normal condition is one in which differences disappear, and in which the marginal quantity thus becomes average. Differences are the great reality. And differences lead to margins, and to totals which are measured therefrom as "differentials." The economist does not deal with graphical squares or circles, so much as with triangular forms.

Social Margins. In the foregoing classification of kinds of margin, reference is made to margins for society. It is not meant by this to imply that society as a sort of individual organism can have the experience of reaching some "social margin." What we may call margins for society are the result of a composition of different individual margins, and they exist as the margins of individuals who are themselves marginal individuals—that is, individuals whose margins are lower than any others in the social group to which they belong.

4. Intensive and Extensive Margins; Diminishing Returns

One reason for distinguishing the different kinds of series with which we deal in economics is that it prepares us for an understanding of the significance of so-called intensive margins and extensive margins. The distinction between these two kinds of margins is usually, if not always, thought of in connection with the processes of production. For example, we get the concept of an intensive margin as follows: We assume the existence of a series of units of some economic good, direct or indirect, which requires that we take for granted not only the origin and life of the goods, but also the practically identical quality of the several "units." In the case of land units, we must assume that they are identical in location. If then we increase the utilization of the particular series of units in question, by combining them with additional quantities of other agents, we are using the given units in a more "intensive" way. If and when the results begin to diminish in proportion to the fixed series of units, we develop successively lower margins of utilization or production, which are called intensive margins. It will be noted that intensive utilization and intensive margins depend upon differences in degree of utilization of some good which is considered as a unit or series of units. The margin in this case depends upon diminishing returns, using that much-abused phrase broadly to include a diminution either in utility to consumers or in product to producers. Thus marginal utility is an intensive concept; so is the margin of production when arrived at by the use of one grade of land.

If, on the other hand, the "units" in a series of economic goods are not equal in all essential respects, but differ in quality, the use of more than one of the "units" necessitates a resort to an "extensive" margin. The general process may be described as making the greatest possible use out of the more efficient or better unit, and then being forced or led to resort to a less efficient or worse unit. There is a physical difference between the two units, and thus the idea of extension is necessarily involved.

We find great differences among units of land area, and there are

equally significant differences among individual laborers and capital instruments. When, therefore, it becomes necessary to use more than one of these so-called units, we experience a difference in *physical* productivity. If the units of the product be sold at the same price, regardless of what different units of the agents of production contribute to it, we also experience a difference in *value* productivity. The least productive "unit" of an agent of production which is used in production, is thought of as the marginal unit—that is, the extensive margin.

Extensive Margin of Consumption. In passing, it seems worthwhile to observe that "extensive" margins exist in consumption as well as in production, although insofar as the author is aware, this thought has not been followed by economists. There are different kinds or grades of consumer goods. When more than one kind of such goods is required, we experience an "extensive" difference in utilities derived from the different units, and this gives rise to a sort of extensive margin of consumption. It may be opposed to the usual concept of marginal utility, which is based upon an intensive appraisal of a series of equal units:

Extensive and Intensive Margins Essentially One. But while these different ways of arriving at a margin exist, and there are different series of goods units, some of which are utilized intensively and others extensively, it seems that on the whole the distinction has tended more to bring confusion of thought than clarification. Some economists appear to have regarded the two kinds of margins as being essentially different, although in fact they are *essentially* the same. The point should be stressed that by adopting the concept of "*the margin of utilization*," we bring the intensive and extensive margins together, or synthesize them. Thus if we speak of the margin of land utilization, we may mean either or both the intensive and extensive margins. From the essentially economic point of view, it makes no difference whether we arrive at the margin intensively or extensively. The point is that both margins represent the point in utilization at which the maximum net return is available. They represent the point to which the economic process in question would be carried if the individual who is acting

had knowledge of all important circumstances, made reflective choices, and were free from coercion.

Danger of ignoring physical differences. While it is thus important to see the essential unity in the significance of so-called intensive and extensive margins, there is danger in going too far in the direction of trying to resolve the differences among goods by forcing them into terms of some common denominator. We cannot go to the length of reducing the factors of production to units of productiveness in terms of value, as for example we find J. A. Hobson attempting to do. He proposes to reduce land to terms of abstract units which would be equal in value. Thus one might speak of units consisting of "a dollar's worth of land." Obviously, this begs the whole question at issue in our discussion of Value and Distribution. How much land is there in a dollar's worth? What determines how much? If one replies that it is the product of the land that determines how much a dollar will buy, we ask, product per what? We see productivity as being without practical meaning unless it be per acre or per some other physical unit. Factors of production cannot be reduced to units of productivity until *after* their productivity (physical yield and value) has been determined.

To put the matter in a nutshell, the procedure suggested by Hobson and others, would ignore the physical realities, such as the fact of extension in land, and the fact of technological efficiency in capital instruments. It would make the so-called units in a so-called fund of land or capital values, depend upon the very value which it is the economist's problems to explain and determine.

5. Other Classes of Margin; Relation to Price

Other classes of margin may be distinguished; for example, some margins may be called simple, while others are complex, the difference depending upon whether the determination of the margin depends upon an equilibrium between two or more forces. If the margin results from the existence of a fixed number of units of a good, which register a certain degree of utility or cost in view of the existing number of users and their desires at a given time, the determination of the margin is relatively simple. If, however, a

process of balancing or equilibrium among the forces of demand and supply is required, in which process variable utilities and costs must be dealt with, the margin is complex.

Again, margins are free or controlled. They are free if they result from individual choices. They are controlled if they are the result of coercion by private monopoly or by the government, which may restrict the quantity of goods available or fix the price.

More important than such distinctions, however, is the following: Margins may be price-determining or they may be price-determined. If the margin be a point of equilibrium between a series of buyers' bids and a series of sellers' offers, such that the marginal bids equal the marginal offers, and the market for the good in question is cleared, we have a degree of importance or a margin which functions in connection with the determination of the market price. Similarly, when subjective values result from a balancing in the individual's mind of two or more marginal utilities, we have a basis for determining objective values which exists when there is occasion for an exchange between this individual and others.

When, however, we have prices fixed by a government, or we find the economist starting his reasoning by assuming the existence of a given price, we are prevented from using the marginal analysis in a price-determining process. By assuming the price, we must consider the individuals who confront it as adjusting their buying and selling to that price. In a sense, it is valid to think of prices as *guiding* individuals in their shifting adjustments to market forces. This, however, will never do for a science of social economics, for it gives us no basis for determining the point toward which the price is tending, and which at the moment may be thought of as the equilibrium level.

T. N. Carver, in his *The Distribution of Wealth*, slips into the practice of assuming that certain expenses are attached to the use of the several factors of production, which is the same thing as assuming that their prices have been predetermined. Then he proceeds to "determine" proportions and margins, on the basis of the assumptions he has made. He begins by speaking of land, labor, and management as not being free in the sense of being unlimited

in quantity. He then jumps to the assumption of *some* rate of charge for their services or some "expense," thus begging the question as to how the expense is determined and how much it is. He even points out that if the employer could get labor or land at less expense, he would use more of them, which is to say that his "margin" would be lower. Obviously, this is adopting a purely entrepreneur point of view, and one which has no validity in social economics.

It seems that we have to distinguish two cases. (1) We may take the physical quantity of a product as a basis for our reasoning, as Professor Carver does in the cases just referred to. In that case, we are dealing with the number of bushels or other physical products per laborer, per acre, or per machine. Increasing and decreasing returns are therefore without regard to cost. Expenses are taken for granted by the process of assuming that *some* expense there must be, and letting it go at that. There is no possibility of relating this process to the determination of value.

(2) In the other case, we proceed on the basis of values, and regard productivity as measured in terms of value, the product being the number of bushels times the price per bushel. This product is then related, not to number of laborers or acres or what not, but either to the energy expended or to the costs pertaining to such expenditure. (Land area, however, being limited only by natural scarcity, is necessarily treated in units of extension.) On that basis, increasing and decreasing returns have their significance with regard to the *cost* per unit of physical product. "Expenses" are not assumed, but have to be determined. Similarly, values or prices are not assumed, but have to be determined. Both expenses and prices are recognized as interrelated problems—the joint problem of Value and Distribution.

There are at least three possibilities in determining the proportions in which the several factors of production tend to be used, and the course of diminishing returns. (1) We may assume the factor or factors to be abundant or free, in the sense that there is no scarcity. In this case, wants for product being assumed, the "aim" of anyone employing the factors is to secure the maximum physical

product from any combination of the physical factors. The margin in this case would lie at the point of maximum physical production, where diminishing total returns in physical units begin to appear.

(2) We may assume the factor or factors of production to be scarce, and thus make the further assumption that (assuming desire⁸¹) *something* must be paid for it or them. Then we may proceed to jump to the assumption of a structure of expenses which in some way has already been determined.⁸² Probably we will then consider that the margin depends upon the contract rates assumed to be paid for the several factors, relying upon the opportunity-cost technique.⁸³ In this case, the "aim" of the management will be to attain the maximum net-value product—the greatest value in excess of expenses. This reduces to a sort of "residual claimant" theory of profits. Of course, the margin here lies, not at the point of the maximum physical product, but at the point of maximum net profit.

(3) In the third place, we may again deal with the factor or factors of production as being desired and scarce, but deduce from that fact only the conclusion that if man is to make use of them at all, he must go to more or less trouble which involves "costs." This commits us to no assumption as to the existence of price-determined expense; and we will explicitly assume that expenses are not known in advance of the determination of the margin, but have to be determined. The question now is, What seems worth while to the various individuals who compose society? The problem includes the determination of the prices that any management must pay in order to secure the services of laborers, capital, and land. It concerns an explanation of the values of goods, both direct and indirect.

⁸¹ "Scarcity" is meaningless except in relation to desire.

⁸² One of the most frequent economic errors is to leap from the general to the particular. For example, we are apt to assume that because interest *in general* is necessary, interest on some particular investment is also necessary. In the present case, we may assume that *some* value attaches to scarce goods, but the question remains, how much? The mere fact of scarcity does not warrant us in concluding that any *particular* value exists, or that contractual prices have been established. Indeed, it may be dangerous to assume scarcity, when that depends upon either cost, or desire, or both. We cannot solve problems by taking for granted a solution.

⁸³ See below, pp. 251f., 264ff.

In this case, obviously, it is quite impossible to speak of anyone's "aim" in the sense that the word has been used in the other two cases, because we are now concerned merely with a scientific problem. The problem is to ascertain where lies the maximum gain to both buyers and sellers—or to both consumers and producers—which exists when the utilities and costs required in order to secure an additional unit of product, are approximately equal, as nearly as can be determined through bids and offers. (The "expenses" which any management may have to incur are determined incidentally to the process of determining the value of the products.)

6. Diminishing Returns ³⁴

Economic margins result from variable returns, whether increasing or decreasing, and are significant because of differences. It is, therefore, appropriate to consider here the idea of diminishing returns. Without attempting to contribute anything to the well-known law which concerns this matter, one should at least deal briefly with certain aspects of the subject which are most commonly misunderstood.

The law or principle of diminishing returns is non historical or non-evolutionary, in that it applies only when conditions are qualitatively unchanged. This may be covered by the qualifying phrase "at any given time," or by the phrase "other things being equal".

The law is, like all other economic laws, a statement of tendency, and therefore is subject to being counteracted.

A recognition that some factor or factors of production are limited in supply, is essential to an understanding of the law; for it is out of such a limitation that the tendency to diminishing returns arises, and if all factors of production were available in unlimited quantities, there would be no such law.

(1) *Evolution of the Idea.* In the earlier thought of economists on this subject, the qualitative differences among different land areas were emphasized, and diminishing returns were thought to

³⁴ Cf. T. N. Carver, *Distribution of Wealth*, Ch. II; C. J. Bullock, "The Variation of Productive Forces", *Q.J.E.*, 1902, C. W. Mixter, "The Variation of Productive Forces, a Comment", *Q.J.E.*, Feb., 1903.

arise on account of the necessity of shifting production from grade 1 land to grade 2 land, etc. A little later, however, the idea of diminishing returns was developed as depending upon different degrees of utilization of one quality of land. It thus depended upon intensive as well as extensive cultivation, in the former case the diminishing returns arising from the use of increasing amounts of other factors of production on a given quantity of land of a given quality. At this stage in economic thought, the "residual claimant" idea prevailed; and particularly it was reasoned that, after a subsistence wage is deducted from the income arising from the marginal use of land, there is a balance which is left for capital. Another characteristic of the thought at this stage, is that separate laws of "diminishing returns" and "increasing returns" were distinguished, the latter applying to capital.

More recently, the development has been in the direction of recognizing a general law of diminishing productivity, but excluding the entrepreneur or business enterpriser from the reign of this law. With this exception, the idea is that each factor utilizes the other factors, production being a matter of combination in a joint process. It is further assumed that there is some combination which results in the most effective balance, or the optimum production. Increasing the use of the several factors, results in increasing returns up to the optimum point; there follows a decrease in returns when the quantities of the factors are increased beyond that point—"other things being equal". The essential point in the theory is that it assumes one or more of the several agents or factors of production to be relatively fixed; or, in other words, it assumes one or more of them to be relatively variable. Thus any expansion in the size of an aggregate of the factors, or in total product, sooner or later results in a disturbance of the most effective combination.

(2) *Enterprise Is to Be Included.* To the author's way of thinking, this stage in our thought about the matter is not satisfactory, because it excludes the entrepreneur as a co-ordinate factor of production. It treats the problem of the size of a business organization as if it concerned only the enterpriser, and as if it were separate from the problem of diminishing returns. It seems that enterprise

(entrepreneurial ability), as a factor of production, is also subject to the principle of balance or productive proportion. Certainly there is a limit to the size of a business organization, and this is but saying in another way that the supply of entrepreneurial ability is relatively fixed. Certainly, too, the so-called law of increasing returns must be regarded as a temporary tendency that applies only up to some point in a series of changes; and beyond that point there comes an unbalanced utilization of productive agents (particularly fixed capital) in the business enterprise, which is attributable to a limited entrepreneurial capacity.

The question as to whether the factor, enterprise, should be included along with other agents of production in the determination of the most productive proportion among the factors, and in the explanation of increasing or diminishing returns, is one of great importance. If we were to decide to keep the enterpriser separate, and to deal with the problem of *size* of business enterprise as a matter separate from the problem of proportion, we probably would find that we were making certain dangerous assumptions. We would be assuming either (1) a given degree of abundance of entrepreneurial ability, or (2) the value of entrepreneurial ability, or both. The basis for this statement is as follows:

If we deal with the matter as concerning the gross product of a business unit, or the size of the output of a given "management," we find that we are concerned with the total number of physical units of product. In that case, we have no significant basis for dealing with the cost³⁵ per unit of product, and no reason for considering whether the cost tends to be reduced to the minimum. The amount of cost in proportion to the total product need not be the lowest possible, and the product per laborer or per acre need not be a maximum. All that is considered is that, at some price, the product brings the largest total sum to the management.³⁶ Thus the management is considered as a material object which is taken

³⁵ Either disutility or expense.

³⁶ Cf. below where it is pointed out that the enterpriser may desire to combine two efficient small companies which make maximum net profit *per unit* of product as a result of low cost, and form one big company which is less efficient, but which gives him a larger total net return.

for granted and assumed to be something fixed and independent of cost.

On the other hand, we may deal with our problem of large-scale business, or the size of a business enterprise, as being one which concerns the net-value product—the product above the costs involved in the functioning of the factors of production other than the entrepreneur himself. In this case, the total number of physical units per business establishment is not decisive, and need not be large. The point is that the *cost per unit* will be minimized, and the product per laborer or acre will be maximized. This is true because the survival of the business unit, considered in this way, must rest upon the test of economic efficiency. The result to be attained is a ratio of total cost to the total value product that is at a minimum. The total sum in profits for the management, however, may not be so large. In this case, the management is just one of several factors of production, and its value has to be determined along with the others in connection with the joint results. The entrepreneurial ability is not assumed to be a fixed quantity independent of cost.

In a word, when the economist adopts the first attitude toward the problem of large-scale enterprise, the problem of determining profits is concealed. When he adopts the second attitude, the problem is opened up and the way toward its solution indicated.

7. Surpluses

In general, the idea of surplus is that of something “more than enough,” and therefore unnecessary. In economics, we mean by “surplus” any net income, whether in terms of utility or money, which is not required to induce the functioning of a person or factor of production. Thus defined, a surplus may be regarded as a total arising from the difference between two other totals, without direct relation to any margin. There are two chief classes of surplus, the competitive and the monopolistic.

(1) *Competitive Surpluses*. The first class of surplus to be noted is that which may arise from free individual choice under competition. Under this head, we have the following:

(a) *Consumer's surplus*.³⁷ This consists of utility. It is usually thought of as measuring for an individual consumer the excess of the "total utility" of a good over the *marginal importance* of the good to the given individual, by marginal importance meaning marginal utility multiplied by the number of units under consideration. This kind of surplus is usually thought of in terms of gratification feeling, and refers to more intense sensations received from any one of a smaller number of units, than from any one of a larger number.³⁸ But the more significant concept is one which takes utility to mean want or desire, and regards the "surplus" as varying with the excess of (1) the desire intensity per unit when the number of units is small, over (2) the desire intensity per unit when the number is larger. Thus the concept is definite only when one total quantity of a good is compared with the total utility of a different quantity of the same good, the surplus being the difference between their "marginal importances" as defined above. We can conceive in a very abstract way of adding at a given time the different consumers' surpluses of all the individuals in a group, to arrive at a total, which concept may help toward an understanding of the idea of a balance between satisfied and unsatisfied desires.

In this connection, the author would suggest the desirability of adding the concept of (b) a *buyer's surplus*. This exists when a buyer pays less for a good than he is willing to pay rather than go without it. It is distinct from consumers' surplus, in that the buyer may not consume the good at all—and a consumer may not have bought the good. A "buyer's surplus" concerns prices, and is usually measured in terms of money. It therefore necessarily involves interrelations with all goods which compete for the buyer's money income. If the buyer has to pay more for one good, thus reducing his "buyer's surplus," he may not be "willing to pay" as much for some other good—which tends to reduce any buyer's sur-

³⁷ Cf. J. A. Hobson, *Economics of Distribution*, Ch. II; Nicholson, *Principles of Economics*, I, p. 58f.; A. Marshall, *Principles of Economics*, Bk. III, Ch. vi, § 1; Ely, *Outlines of Economics* (5th ed.), pp. 179-180.

³⁸ Thus historical time differences are apt to be involved, as when one says that he used to get more pleasure out of one car than he does now out of three cars.

plus he may get from purchases of the latter. To the extent that prices are objective social phenomena, it may seem easier to think of a "buyer's surplus" for a society than of a "consumer's surplus". (This, however, is a very rough procedure, because the importance of money to different consumers differs; and we have to assume that variations in purchases resulting from variations in income, have a direct relation to variations in desire, which need not always be the case.)

(c) There is obviously a *producer's surplus* which exists when the utility of a good to the producer exceeds his cost of producing it, or when the utility income derived from the producer's sale of a product exceeds his disutilities in producing it. The total producer's surplus for a group is the sum of the individual producers' surpluses. If such a surplus exists under competition, we may be fairly sure that the average cost is less than the marginal cost.

(d) In the same way that we distinguish buyer's surplus from consumer's surplus, we may also distinguish a *seller's surplus* as contrasted with producer's surplus. Any seller who gets a price higher than he would be willing to take, may be thought of as receiving a seller's surplus. Moreover, it is probable that the total sales in any industry tend to exceed the total of the "supply prices" at which sellers are willing and able to offer their goods for sale; so that we may think of a sellers' surplus for the whole group.

Thus these competitive or free-individual-choice surpluses are automatic, and the producers' surpluses are, in that sense, "earned". They may all be differentials, in the sense that the totals vary with variations in margins; but it is important to note that the supra-marginal consumers or producers *would be willing and presumably able to function in their several capacities without the surpluses* which they receive. The surpluses are not necessary for motivation.

(2) *Non-competitive Surpluses.* The second type of surplus may be called non-competitive, in order to distinguish it sharply from the competitive type of surplus. Under this head we have the well-known idea of (a) *monopoly surplus*, which is the excess of the net income of a given seller (or buyer), under monopoly, above what it would be under competition. Here, too, we may place (b) *surplus*

of *exploitation*, which depends for its existence upon fraud, extortion, and the like, as illustrated by the case in which an employer may beat down the individual laborers whom he employs, thus paying wages which are less than the contribution to the product made by labor. Surpluses of superior bargaining power are not differentials, but come in the form of totals which are not dependent upon margins. They may mean coercion; they are unearned.

(3) *Conjunctural Surpluses*. Finally, we may distinguish conjunctural surpluses, which arise as unearned increments resulting from chance events.

(4) *Pseudo-Surpluses*. Perhaps it is not too far fetched to remind the reader that the history of economic thought shows that there have been ideas concerning surplus which are not founded upon realities, so that we may refer to false or mirage surpluses. Thus the apparent surplus which an employer gets when, by organizing a group of 10 laborers, he is able to get a product which is more than 10 times what any one of the laborers could produce alone, may be called the organization-surplus notion. Again, the apparent surplus which develops during the process of adding units of one factor, say labor, to a fixed supply of another factor, ceases to exist as each new combination becomes effective. *At any given time*, the reality is the going combination at that time, and the fact that an earlier combination resulted in a larger product per laborer, is but history. This is the "dosing-method surplus".

Finally, there is an idea of surplus which is not economic at all, but is based upon ethical ideas. The general type of ethical surplus is the one which assumes a fixed basis in human "needs", and then holds that anything in excess of this assumed basis of "need" is excessive, and therefore a surplus. Some economists' treatment of what they call "over-production", arising from so-called "under-consumption", rests upon this idea of surplus. Their notion of over-production depends upon their ideals as to consumption.

8. Differentials

The term surplus may be used as a broad one which includes not only the types of surplus discussed on the pages immediately pre-

ceding, but also differentials. In any event, however, the concept of a "differential" is to be sharply distinguished from the general idea of surplus, and is at least to be regarded as a very definite and particular kind of surplus.

The general idea of differential is that of relative advantage. The concept depends upon the existence of differences, and of a margin, with respect to which the supra-marginal items have a differential. *A differential is usually a price-determined³⁹ surplus above a marginal level, which results from differences in productivity or utility or cost among units in a series.*

For example, suppose that one laborer makes $5\frac{1}{2}$ units of a certain product in an hour, another makes $5\frac{1}{4}$ units, and another 5 units. If these units sell at 10 cents a piece, and if the uniform wage rate be 50 cents per hour, the employer gets the following "differentials": 5 cents per hour, or 40 cents per eight-hour day, for laborer No. 1; 2.5 cents per hour, or 20 cents per eight-hour day for No. 2; and 0 for No. 3, who is marginal. If the laborers are paid 10 cents per piece, No 3 gets 50 cents per hour, and Nos. 1 and 2 get "differentials" above 50 cents, amounting to 5 cents and 2.5 cents per hour, respectively.

Differentials exist under competitive conditions, and are most sharply defined when competition is the nearest to being perfect. Thus, when competition insures the sale of units of a product at the same price, while different units of a factor yield different quantities of that product, the more productive factor units get a differential return. They involve differences in returns, and probably the idea of a rate of change. These differences in returns measure the differences in the economic effectiveness of units of whatever goods may be involved, *and they have to exist (in the case of producers' goods, they are usually "paid") in order to insure the functioning of all the units.* This last characteristic is probably the most essential point in the nature of the differential as contrasted with surplus in general.

For example, if the price of wheat rises from 80 cents to \$1.00 a bushel, and, as a result, a field which formerly produced 10

³⁹ Or the "differential may be measured in terms of value or utility."

bushels per acre with \$8.00 of expense and cost, now is cultivated to produce 12 bushels with \$10 of expense and cost, we find a differential, as follows: at first, we get \$8 per acre with no surplus; then we get \$12 per acre, with a \$2 differential. And unless the \$2 per acre is received by the owner or tenant,⁴⁰ there is no assurance that the land in question will tend to be cultivated in the manner we have supposed, or that the differential will be earned.

Just as we have extensive and intensive margins, so we may distinguish extensive differentials and intensive differentials. Extensive differentials, measured of course from extensive margins, represent differences in the economic quality of the so-called units which are involved—differences within the goods or the persons. They may exist with or without the phenomenon of diminishing returns. Intensive differentials, measured from intensive margins, represent differences in organization or balance, as affecting the functioning of goods or persons considered as equal units. Intensive differentials arise as the result of a process of diminishing returns per unit, and do not depend upon differences in the quality of the units.

In the history of economic thought, we find that the idea of differential has developed around the idea of differences in "natural" advantages, particularly evident in an objective way in the case of land. The outstanding differential return, therefore, has become land rent, and many economists use "differential" and "rent" indiscriminately.

9. Imputation

In connection with increasing or decreasing returns, differentials, and margins, the problem of imputation is bound to arise. This problem, which will be approached in a more fundamental way in another chapter,⁴¹ seems to take two forms.

(1) *Direct Goods*. In dealing with the value of direct goods, we often go through the process of imputing the value at the margin to the whole supply of goods. In other words, we impute the value

⁴⁰ If the land be rented, the tenant may not see or care to act upon the possibility of getting more product and income at the higher price for wheat. The landlord, however, may demand more rent, thus putting pressure on the tenant.

⁴¹ See below, p. 173; also above, pp. 26-27, 100.

of the marginal unit to all the units. In the case of sales, this may be the result of a subjective exchange value, since the total number of units may not actually be undergoing the process of exchange.

It seems that little difficulty arises in understanding and accepting this sort of imputation. Two questions which arise, however, are: Are the "units" all equal, or sufficiently similar, so that they may be truly treated as having equal importance? Have the units all functioned in the determination of the margin, and do they remain available as a part of the effective supply situation? Obviously, if a part of the units are withdrawn or withheld (e.g., cotton held by the government), they may not be available at the same levels of value as the others. It is probable that in the business world such situations arise not infrequently. Without further discussion, however, we may say that the process of inputting marginal values to the total supply of a good for sale depends upon the uniformity and continuity of the market.

(2) *Indirect Goods.* The great problem of imputation, however, arises in the valuation of indirect goods, or agents of production. In this case, the problem is to determine, at least in part, the value of the instrument considered as a means, by imputing to it the value of the products which are assumed to result from its functioning.

The usual procedure is to begin by assuming the total product value, which involves a number of product units multiplied by an assumed price per unit. Then attention is directed to several different agents or factors of production upon which the *physical supply* of the product depends, some of these agents being relatively fixed in quantity. A "share" of the total product value is then imputed to each of the variable factors. This may be done by increasing the number of units of the variable factor or factors, noting the increase in total *physical* product, and attributing to the varying factor the addition in product⁴² which coincides with the last added increment of the factor. (Or the process may be

⁴² The addition in product which is thus observed, is physical product, the value of which is merely assumed.

reversed, and by subtracting units of the variable factor or factors, the accompanying decrease in product units may be imputed to the units of the factors that are withdrawn.) Finally, the difference between (1) the total product and (2) the part thereof which is imputed to the variable products, is imputed to the fixed factor as a "rent," or differential. If nothing remains, and there is nothing to impute to the fixed factor, the said factor then has no value (e.g., "no-rent land").

The typical process of imputation may best be understood by examining the following table, noting that it is subject to various criticisms which are mentioned in the following discussion:

Units of Fixed Factor	Units of Variable Factor	Total Product	Addition to Product	Variable Factor's Share	Fixed Factor's Share
1	0	0	0	0	0
1	1	10	10	10	0
1	2	15	5	10	5
1	3	15	0	0	15
1	4	14	-1	0	14

Reading across the second row in the above tabulation, one finds that 1 unit of the fixed factor is combined with 1 unit of the variable factor, resulting in 10 units of product, which is the addition to the product; and since the variable factor is the only one in question, and has to be induced to function, it gets all of the 10 product units, thus leaving 0 for the fixed factor's share. Similarly, following the third row of figures, one finds that to the 1 unit of the fixed factor there is now added another unit of the variable factor, so that 2 variable units are combined with 1 fixed unit. The result is a total of 15 product units, which is *an addition* of 5 units to the product. Since there are 2 variable units, each one of which contributes or adds 5 product units, the total share of the variable factor is 2 times 5 or 10. This leaves 5 product units for the fixed factor.

The examples might be continued, with variations, almost indefinitely, but the principle involved should be sufficiently clear by this time. On the assumption here made, the total product ceases to

increase when 3 variable units are combined with 1 fixed unit, yielding only 15 product units. At this point, there is no addition to the product to be secured by the added variable factor, which makes this the "marginal" point. Thus the maximum surplus or rent is 15, all of which is retained by the owner of the fixed factor (or of its use) as a "differential".

Many questions might be raised concerning the foregoing procedure. Obviously, difficulties arise in assuming that (1) the several variable factors are equal in their variability. When they are scarce or have to be produced, important economic problems are involved in their supply and maintenance, so that we cannot take their availability lightly for granted. Again, what right have we to assume that (2) their several variations have the same logical significance in connection with the variation of the product? Many economists have considered that (3) changes in a single factor have a greater significance than pertains to the mere addition or subtraction of a unit of the single factor, holding that an element of organization in the situation is affected. The point which the author would emphasize, however, is that (4) such a procedure of "imputation" as outlined above appears to assume the price of the product, and therefore the total value of the output. There is great danger of reasoning in a circle by "imputing" an assumed value of product to the factors of production, and then proceeding to argue that the price of the product is determined by the imputed shares of the factors! (This point has already been touched upon in our discussion of the margin on page 115. We will return to the difficulties of imputation with more specific reference to the marginal productivity theory of wages.

10. The General Significance of Competition

An attempt has been made to explain how economics, as a true science, takes a social point of view based upon a recognition of the two realities, (1) different individuals and (2) society. We have seen how, with the aid of margins and differentials, economists have been able to make considerable progress toward measuring economic quantities; and why, for the sake of dealing in quan-

titative values, it is expedient to adopt a narrow definition of "wealth". It has become apparent that the concept of objective exchange value enables the economists to find laws that contribute to an understanding of how men may gratify their wants with the least cost, thus giving meaning to the economic side of life in society. Now there arises the necessity of considering the conditions and processes according to which individuals in society function to determine the objective values by which we measure wealth. This process is competition.

VI. COMPETITION ⁴³

The following pages do not attempt any complete discussion of competition, nor do they aim at any contribution to the theory of that force. The purpose is merely to analyze its significance as a postulate for the theory of objective economic value. Incidentally, the reader is to be more fully informed of the use of terms and the logical assumptions which characterize this work.

1. Definition and Essential Prerequisites

By competition, we mean a condition in which there are effective choices by individuals in connection with the exchange of goods, whether expressed as buyers in markets or as producers displaying initiative. It should be repeated, the essence of the thing is effective individual choice. This means a condition such that most individuals, in their producing and consuming activities, voluntarily choose among a range of alternatives which is limited only by their own capacities and knowledges, and by their material environments.

For the functioning of such choices, there are a number of logical requirements which seem to embrace at least the following:

⁴³ See Ratzlaff, *Theory of Free Competition*, Burns, *Decline of Competition*; T. N. Carver, *Essays in Social Justice* (1915); H. Clay, *Economics* (Amer. ed. 1920); Chamberlin, *Monopolistic Competition*; Round table discussion of Imperfect Competition, *Amer. Econ. Rev.*, supplement, March, 1934; R. F. Harrod, "Doctrines of Imperfect Competition", *Q.J.E.*, May, 1934; H. G. White, "Monopolistic and Imperfect Competition", *Amer. Econ. Rev.*, Vol. XXVI, pp. 637-649 (1936); Joan Robinson, *Economics of Imperfect Competition* (1933); Haney, *Business Organization and Combination* (3rd edit.), pp. 517-538; B. Wooton, *Lament for Economics*.

(1) The individual must be primary in importance as contrasted with society, and therefore self-interest be fundamental. The main significance of this first requirement is that out of it arises the essential condition that *what individuals desire is the primary determinant of what constitutes income and wealth*. Incidentally, it is probable that the point implies a tendency on the part of most individuals to desire to increase their respective incomes or wealths. (This may mean merely that desires are motivating forces.)

(2) The second requirement for effective individual choice, is economic motivation. This means a condition in which most individuals make their choices without coercion by authority or blind customs. Probably this requirement includes a prevalence of reflective choice; but it leaves ample room for the functioning of those reflex actions which do not conflict with the existence of individuals together in society. Predation and greed have to be inhibited.

(3) A third requirement is one which is usually termed "equal opportunity". By this is meant the existence of the chance for each individual to show what capacities he has, and to put such capacities to some test of survival which is in accord with the ethical sense of the community in which the individual lives. This is apt to find expression in the freedom and facility with which enterprisers can enter and leave an industry. Obviously, equal opportunity may lead to great differences in the functioning of individuals and in the utilization of resources.

(4) The rewards for economic activity must be determined with relation to the economic value of the product attributable to such activity. (Nor is it so necessary that exactness obtain in this relation, as that the existence of the relation be accepted as a test.) Without the fulfillment of this requirement, individual choices cannot be effective, and action could be counted upon only with more or less coercion. A corollary is that what the individual competitor does affects his income; for example, under competition, if one producer raises his price for a given product above the market level, he will tend to lose all his business in that product.

The effectiveness of these elements, of course, involves an assumption of considerable *mobility* and power of substitution, coupled

with a knowledge of conditions affecting the choice, such as differences and alternatives.

With the foregoing introductory discussion of the significance of economic competition, we may now attempt a definition of this condition. *Competition is that course of action by two or more buyers or sellers with reference to economic goods, in which each seeks his own advantage in the shape of the maximum spread between expenditure and income, making bids or offers independently, or without direct regard for the gain of others.*⁴⁴ Under competition, there is, of course, no agreement as to unity of action pertaining to prices. (This condition, however, does not imply ignorance of the prices charged by others. Nor does it involve any lack of a true social point of view. In popular language, it may be described as "enlightened self-interest".) Under competition, sellers seek to sell all that they can dispose of without loss, thus causing a tendency to equalize costs and values.

As a supplementary definition, we may add the following: Competition is a means of allowing individual desires and aversions concerning economic goods to function with a minimum of restraint, thus insuring that they will be so directed as to *tend* toward a balance between the two that may be called equilibrium in a scientific sense.

Before leaving the definition of competition, we should consider the claims of those who would adopt a different definition, notably those who would abandon the assumption of competition as a sufficiently simple force or condition to serve as a basis for economic theory. One representative of this tendency⁴⁵ starts by setting up a straw man, called "pure competition"—which, despite disavowals, appears to be really a form of "perfect competition". This sort of competition is then so defined that it could not possibly exist in reality, and it is therefore easily knocked over. The requirements proposed for so-called "pure competition" are stated by the "monopolistic-competition" theorists to be as follows:

⁴⁴ It is intended that this definition should be equally apropos to buying and selling. Doubtless one finds it easier to apply to selling, and a little mental adjustment is required to apply it to buying.

⁴⁵ E. Chamberlin, *The Theory of Monopolistic Competition* (1938).

(1) A large number of buyers and sellers, so that no one of them will have any appreciable influence upon the price.

(2) Each seller must assume that his entire output can be disposed of at the prevailing market price.

(3) The goods sold must be identical.

(4) The sellers must be equal and practically capable of treatment as units.

(5) There must be no advertising or sales policies which would influence people, "differentiate" products, etc.

When one considers these requirements, their unreality becomes apparent. That any one buyer or seller should influence price is no necessary indication of monopoly; *by competing*, any buyer or seller necessarily influences price. In fact, the statement is made that if "sellers neglect both their indirect and their direct influence upon price, the outcome will be the purely competitive price, *regardless of numbers*".⁴⁶ The competition with which the author is familiar, and which is usually assumed by economists, is one in which each seller may hope that his entire output can be disposed of; but he is not sure of that, and he is even less sure of what the price will be. He frequently offers his goods at a reduction in order to move them. The goods of competitors do not need to be identical in all respects; it is enough that they have the same utility and serve to gratify the same sort of wants. As to sellers being the same, the economist referred to states that it might be argued that the utilities purchased could be the same only if *buyers* also were standardized; and while he dismisses this suggestion as being one which does not follow, it seems that there is no more reason why it should be dismissed than the assumption of uniform goods and sellers.

The foregoing purist attempt to limit the concept of competition, stands opposed to the concept of competition as a motivating force operating under conditions of free choice. It stands opposed to regarding competition as a tendency to produce or sell all that producers or sellers can dispose of at a profit, which leads to the crucial tendency toward an equalization of cost and value or expenses and price. (This opposition appears in the fact that Professor

⁴⁶ *Ibid.*, p. 54. Chamberlin's italics.

Chamberlin holds that competition tends to *maximize each competitor's profit!*) It is sufficient for the existence of competition, that all the competitors desire to sell all that they can without loss, allowing for some reward for entrepreneurial ability. When this condition exists, competition may be called complete. Then, to the extent that it be found that there are competitors who do not desire to sell all that they can sell without loss, allowance for the differences which varying degrees of incompleteness may cause, can be made without logical difficulty.

2. Economic Science Assumes Competition

Economics is based upon objective values, and fully objective values arise out of voluntary individual choices. Such being the case, it is clear that economics *as a science*—in the common sense of that term at the present time—can exist only upon the basis of competitive process.⁴⁷

In such a process, individuals are the primary realities. Each individual has certain predispositions toward maintaining, perpetuating, and expressing his "self", in which category he may include his family. Furthermore, no two individuals are alike, and their different wants and different capacities make it impossible for them to function equally. The competitive process is the result of the different individual valuations which arise out of such a condition. *It is the process by which the economic importance of goods is determined with relation to a group of subjects whose appraisals and capacities differ.*

Only through a synthesis of individual valuations can we arrive at objective values which will be freely accepted by the members of society.

Economics assumes such values to be real and to have an independent importance. They are certainly separable from other values according to tests or criteria which will be fully discussed.⁴⁸

⁴⁷ This obviously does not exclude the recognition of so-called monopolistic competition.

⁴⁸ See below, p. 194ff.

3. Tends toward Maximum Net Utility

More than that, objective economic values, competitively determined, afford in themselves a standard for survival which is likely to result in the largest total of net utility. Such values have the great merit that they necessarily involve ample recognition of scarcity and costs, and it is one of the great weaknesses of all attempts at valuation which do not proceed on the competitive basis, that they provide no assurance that the costs or disutilities will not exceed the gratifications or utilities resulting from any given action that may be decided upon. (Even monopolies "discriminate"). This point brings out the significance of the old theory that price tends to equal cost of production. Certainly, it is consistent with the idea of a maximum total net utility that we find competition tending to result in a minimum cost per unit of product, while also tending to maximize both producers' surplus and consumers' surplus.

The reasons for holding that competition affords such a test of survival, have often been stated. In the first place, it provides a *motivation* which is generally recognized as being effective in stimulating activity. Under competition, individuals have a chance to gain by increasing their particular efforts. At the same time, they are subject to the penalties of failure, and to the elimination of the "unfit" from the particular field. Perhaps even more important in this connection, is the fact that competition furnishes a directive factor, since the competitors necessarily have to put such goods and services on the market as consumers want, and to follow the processes of the profits system.

4. The Only Basis for Real Economic Equilibrium and Coordination

Besides the motivation factor, there is connected with competition the idea of equilibration—the tendency of exchange values to express a balancing between costs and utilities. Unless one assumes that some authority exists which can know what individuals want, and know what costs are, it is difficult to conceive of any possibility

of a constant tendency to bring consumption and production into equilibrium with reference to human desires and aversions, except under competition.

Competition provides the basis for *coordinating* the functioning of different individuals. Individuals differ, and there is no way to know who the best ones are, except to allow them to show what they can do, and to engage in a free exchange of goods and services. The result *can* be an organization in which sub-marginal individuals are eliminated from the economic game, while the more efficient ones are rewarded in proportion to their efficiency. This could result in an ideal or most efficient economic organization.

Finally, under competition we *can* get a distribution of wealth and income such that the shares are determined by a process of valuation which represents a composition of free individual choices. The result *can* be that rewards and incomes not only cover the subsistence of the individual competitors, but are in accord with their different capacities. This would tend to maximize production, and thus insure the maximum quantity available for distribution.

It will, of course, have been noted that the author here states only that competition *can* provide such distribution and such an organization. The point is that, while the ideal may have never been attained, it is a possibility under competition, while it is not a possibility under any other known condition, except occasionally by chance.

5. Competition as a Method of Determining Ends

Competition is one method of solving the problem of qualitative values, or of deciding which are the best ends of life. When one asks who knows what is best for an individual, or what an individual's real interests are, who can answer? Do we have any assurance that any planning agency can be selected which will fill the requirements? And would the chance of finding the good planning agency not be greatly reduced if all candidates were deprived of the experience and education which is gained under a competitive regime? More than that, even on the assumption that in some way such a planning agency could be selected, what assurance do we

have that the individuals for whom they would make decisions would accept any plan that they might adopt? For short periods, propaganda may "sell" almost any plan to any closely interrelated group of individuals. Is there not reason, however, for considering such programs as being essentially coercive and doomed to a relatively short life period?

The clearly implied answers to these questions make it seem impossible to accept as the basis for a social science the planned economies which sprang up in the 1930's.

Again, who has the strongest motive to act—to strive toward any selected goal? This brings us again to the matter of motivation. Suppose that some ideal planning agency could be arranged, and that its decisions would be accepted by the individuals of a society—what presumption would there be that the goal would be sought with the keenness and persistence with which individuals pursue those goals which they themselves have seen and desire to strive for?

It is in this connection that the "value" of competition both as an educational process and as a means of self-expression should be recalled.

6. Equal Opportunity

Finally, we must recognize that the effectiveness of individual choice and the competitive process, depends upon getting all the individuals into action. This is the significance of the idea of equal opportunity. Unless all the individuals in the society have the chance to meet the test of equal opportunity, so that each can produce according to his capacity, and each get an income according to his product, there can be no assurance that the competitive system is attaining the results which it is able to afford. This means both a negative and a positive requirement. Negatively, there can be no discriminative restrictions that would reduce or prevent equal opportunity. Positively, it means the establishment of all possible conditions designed to afford an equal start to each member of society.

The last point is one which is subject to great misunderstandings

and misinterpretation. Real equality in human affairs is not an absolute matter; equality is relative. An equal start means a start which is calculated to give each one the chance to show both what he can do and what he can't do, or a start which is in accord with his capacities. Of course, there is implied the idea that in starting, individuals must not be allowed to hinder others, and the analogy of the start of a foot race may be alluded to for the purpose of suggesting the significance of this thought. For example, should the chance to start be so extended, by compelling the retirement of men above a certain age, as to cut short the careers of socially productive individuals, thus reducing social income? Or should employment be given to all by means of a shortened work week, if one result would be increased cost and reduced output per employee? Should so much cost be incurred in seeking to discover and develop latent capacities in some individuals, that the products of those individuals do not equal the burden borne by those who pay for the attempt? The answers, if not plainly in the negative, are at least not clearly in the affirmative.

Among the more obvious and important agencies for developing more equal opportunity are education, employment bureaus, information service, and small-loan credit institutions. If, with due regard to cost, such agencies work toward real (relative) equality of *opportunity*, and do not try for the vain goal of equality of capacity or income, much may be done to make competition more effective.

7. Quantitative and Qualitative Aspects of Competition

In order to understand competition as an economic force, it is essential to think about it as having two aspects, a quantitative one and a qualitative one.

First we may think about the quantity of competition, or what may be called its effectiveness. This concerns the scope of competition, and the intensity with which it works within the given field. Obviously, these quantitative aspects may be considered without any relation to the question of the quality level of the force, and too often this is exactly the way the matter is treated.

(1) *Quantitative Aspects.* From the purely quantitative point of view, the chief limitations on competition, particularly among sellers, are the following:

- (1) "Natural monopoly":
 - (a) Limited natural resources.
 - (b) Diminishing cost or increasing return (enterprise being included as a factor).
 - (c) Joint cost; by-products.
- (2) Dependence upon advantage of location.
- (3) Transport costs.
- (4) Inelastic demand schedule, or inelastic supply schedule, or both.
- (5) Few sellers.
- (6) Unorganized markets.
- (7) "Identified" goods, or absence of uniformity in quality or quantity among the "units" sold.
- (8) Non-economic interference, such as government restrictions.
- (9) Ignorance of opportunities.
- (10) Custom—the dead hand of the past.

It is not the purpose to present here an exhaustive analysis of the limitations upon the scope of competition. The foregoing list is sufficient merely to emphasize the significance of the quantitative element. Obviously, the field of so-called natural monopoly, rising out of a combination of the two conditions, diminishing unit costs and joint expenses, is the chief limitation upon the existence of competition in manufacturing industries within a wide field which has probably grown with the technique of large-scale integrated industry.

It is the author's judgment that the scope of competition is wider than is now recognized by many economists. We find not only *direct price competition* among rivals in the same line of business, as the type which is most commonly thought of; but we find to a growing extent what may be called *profits competition*. By this is meant a system of competition in which price uniformities are maintained at the same time that the competitors try to secure a larger volume of business, either by improving the quality of their products or the service they give, or by sales effort and advertising. They may and often do seek by selling and advertising expenditures to increase their "volume" at the expense of competitors—all the time maintaining the same price—hoping thus to reduce

their unit costs and perhaps to get the basis for a larger pro rata, some pooling arrangement is involved.⁴⁹

Again, there is a sort of *indirect price competition*, which is sometimes called "business-unit competition", in that it affects the total business of a concern which handles several different products. Thus a store may advertise a "leader", perhaps cutting its price below the cost, with the idea of inducing a larger number of people to inspect its other goods, and thus increase its competitive share of the total business.

Then, too, there is competition among *substitutes*, which has become highly developed during the last decade. There are not only direct substitutes, such as cottonseed oil for lard; but there is the phase of substitution which is referred to as *competition for the consumer's dollar*. Thus one may hear the clothing dealer bewail the success of the automobile salesman. Cigarette manufacturers have urged consumers to buy their wares instead of sweets.

Finally, we may refer to *potential competition*. This is not competition, but it is a threat of competition, and it serves at least to limit the excesses of monopoly in many cases.

All this is far from establishing a regime of complete competition, to say nothing of "perfect competition." The point is that under such circumstances, considered realistically, it does not seem possible to argue that monopoly is in fact the normal condition of business. (And, of course, even if such were the fact, it would not follow that monopoly would be any the more desirable.)

The other aspect of the quantity of competition concerns not the scope of the field within which competition exists, but the *intensity of the competition*. This is a variable matter, and depends upon the ease of entering the competitive field (capital required and degree of specialization), the ease of abandoning the competitive field, the existence of decreasing cost per unit, and the conditions which facilitate combination. The condition of cut-throat competition which one hears about so frequently, and occasionally

⁴⁹ E.g., something of this sort is found in the automobile business. It is best illustrated by the cement industry with its basing point system of delivered prices.

observes, is very likely to be connected with a condition of decreasing unit costs (or increasing returns) which leads producers, generally those having large fixed capital investments, to cut prices in order to increase volume of business with the hope of reducing expense per unit of product.

An important limitation on competition is the desire of the enterpriser to receive a large *total* profit, rather than the maximum profit *per unit* of product. This point has already been touched upon in another connection. It is brought up here because we observe in the business world a tendency on the part of some business leaders to build up big business units, and there is reason to believe that a part of this tendency rests upon their interest in concentrating a large total profit in their own hands. It might be that two small concerns could be managed by their respective enterprisers with such efficiency that they could produce at a lower unit cost than would be possible if the two were combined and the total business were handled by a single enterpriser. Thus the separate operations would be in the best interest of society, or of the consumer, at least. The combination, however, would mean the possibility of a larger profit for some one individual enterpriser. This tendency is closely connected with the well-known motive which leads men to seek combinations in business for the sake of power and prestige.

Again, the reader is reminded that economic science requires that enterprise itself be subject to the competitive process, and that profits, as a share in Distribution, be determined as a part of the valuation process, thus representing the value of entrepreneurial service.

It is with relation to the concept of quantity of competition that the phrase, "perfect competition", is generally used. Probably most economists in discussing perfect competition have had in mind chiefly the intensity of competition. While, therefore, the word "perfect" suggests the broadest sort of an appraisal, which would include the quality of the competition, we will for the moment consider the concept on the usual quantitative level.

The tests of theoretically perfect competition in a given industry,

in this sense, are found in the nature of the demand and supply schedules, or more specifically, in the closeness and regularity with which the different buyers' bids and sellers' offers are arranged. Competition can approach "perfection" in the sense of being complete or "pure", only when demand and supply schedules are, in this sense, "elastic". For example, there is no elasticity on the supply side if any one of the following conditions exists:

A single seller.

An acute shortage of the good.⁵⁰

A condition in which the existing supply has to be sold at once for what it will bring.

Potential sellers have no desire or will to sell.

Several sellers, but no independent supply prices.

Similarly, there is no elasticity on the demand side if there is:

Only one buyer.

An acute surplus of the good, a "buyers' market".

Purchases are of absolute necessity.

The demand is completely sated.

Demand prices not independent.

On the basis of any of the foregoing assumptions, there could be no assured elasticity, and hence no possibility of perfect competition. Under any of these conditions, the action of any one seller or buyer would probably have a large effect on the market.

The competition among sellers, for example, may be called quantitatively perfect, if (1) when any one seller raises his price, he finds that he loses the business and can make no sales; or if (2) when any one seller increases the quantity for sale, the immediate effect is a tendency toward lower prices.⁵¹ Obviously, this condition requires more than one buyer and more than one seller. Their attitudes must not be interdependent. There must be no important

⁵⁰ In this case, even if there be several sellers, the number of buyers per seller (or the quantity demanded from each) is so large that there is virtually only one seller! This is a "sellers' market".

⁵¹ Probably "perfect competition" implies a tendency toward a condition in which eventually an increase in output by one of the competitors would force the withdrawal of some other producer; and thus it need not involve any appreciable change in price in the long run.

condition of absolute need or absolute scarcity. There must be neither forced sales nor satiety.

Certainly, there has been a great deal of confusion in economic thinking as a result of assuming that perfect competition must be an actually existing condition. Furthermore, an assumption which often accompanies the foregoing, is that the alternative to perfect competition is monopoly; and this assumption is also the basis for careless thinking. Some thinkers virtually define monopoly as being the absence of competition. Such a negative definition is always dangerous, and in the case of monopoly the trouble in part arises from uncertainty as to the kind or degree of competition they assume to be absent. Do they mean that monopoly is the absence of "perfect" competition? Or do they mean that it is the absence of any kind or degree of competition, no matter how imperfect or slight? Obviously, the meaning of monopoly may vary widely according to the answer to these questions.

We might as well define competition as being the absence of monopoly as to define monopoly as the absence of competition. Then, again, the question would arise, Do we mean the absence of *complete* monopoly, or merely the absence of some partial monopoly? (All this is to say nothing of the existence of other possible limitations on competition, such as ignorance and the force of custom.)

Concerning all this line of confused thinking, it is necessary to observe that in reality there are three zones—with the possibility of any number of sub-zones—within which the economic forces may be classified as regards the effectiveness of individual choices. These three zones are: (1) complete competition; (2) partial competition, which may also be described as partial monopoly, although there is the further possibility that competition may be limited in other ways than by monopoly; (3) complete monopoly. It follows that, in dealing with actual conditions in the world of reality, the economist may say that neither perfect competition nor perfect monopoly is "normal" in the sense of being a continuously prevalent condition in all businesses.

From the point of view of economic theory, however, when we

reason abstractly in the search for "tendencies", it is expedient and logical to assume the existence of *complete* competition. Then when analysis or prediction is essayed with reference to concrete conditions as actually existing, we must and can allow for the difference between complete competition and partial competition. Nor is this a mere ideal, incapable of realization. The author's practical experience includes not a few cases in which, after making a forecast of the price of some commodity on the basis of demand and supply intensities, and quantities available, assuming competition, an adjustment has then been made to allow for the existence of a pool or influential price "leadership" in the industry. In forecasting steel prices, one must allow for the tendency to maintain prices during a general recession until increasing volume of business can be stimulated by a reduction.

"MONOPOLISTIC COMPETITION"

Beginning about 1925, a number of economists have sought to eliminate from economic theory any assumption of "perfect" or pure competition, and to substitute therefor the concept of imperfect or incomplete competition. One of the leading representatives of this movement calls it the theory of "monopolistic competition",⁵² the idea being that the usual condition in the world of reality is a mixture of monopolistic and competitive elements. To deal with this movement in a summary way, is not easy, but perhaps the following list of the weaknesses and limitations which those who propose "monopolistic" competition allege to be inherent in the theory of competitive equilibrium at a definite marginal point or level, may supply the clue:

(1) Products of different producers are often not homogeneous, even within a single industry.

(2) Competition often does not center upon price, and therefore, the critics appear to allege, it does not determine price. (a) Buyers

⁵² E. H. Chamberlin, *The Theory of Monopolistic Competition* (Cambridge, 1933). Chamberlin says that his thesis "is that both monopolistic and competitive forces combine in the determination of most prices, and therefore that a hybrid theory affords a more illuminating approach to the study of the price system than does a theory of perfected competition, supplemented by a theory of monopoly". (Preface).

may prefer products for reasons other than price. (b) Individual sellers' policies may not directly concern or affect price. (c) Many individual producers do not usually produce under conditions of increasing *individual* costs.

(3) Decreasing unit costs, they assert, prevent industrial equilibrium under competition, and tend toward monopoly.

(4) Demand schedules are often inelastic.

(5) Enterprisers, by sales efforts, influence demand schedules, thus making demand and supply schedules interdependent.

(6) Total and average costs and profits are not necessarily equalized by competition, and therefore, the critics argue, even if margins were equalized, equilibrium would not be complete.⁵³

Taking up these allegations in order, we find that, allowing for a reasonable tolerance as to differences among the products of competitors, if they are so different that price is not an essential factor in deciding an individual buyer's choice at a given time,⁵⁴ then the products in fact have different markets. It will usually be found erroneous to consider them as competing directly with one another in the same market.

If, however, the products, while "differentiated," are so essentially similar in kind that their main appeal is to one given kind of want, the case is different. To the individual buyer, it may *seem* that the price does not make any decisive difference; but this seeming may be due merely to the amount of the price difference. Thus nowadays, the high-priced automobile gives the buyer little in the way of transport which the low-priced car does not give. It really is in competition with low-priced cars, and the price is involved in the comparison. But it *costs* so much more to build that its price remains high, and thus *out of reach of many buyers*. In reality, the decisive difference may lie in the number of utility units or cost units which the several competing goods "contain".

⁵³ "Monopolistic competition" theorists tend to emphasize the inadequacies of the marginal productivity theory of Distribution,—which may be an incidental service.

⁵⁴ Note that this statement does not commit us to the entrepreneur point of view, or to the doctrine of opportunity cost. In reality, when *price* is said to be a distinct factor in choice, we find that in the last analysis it is cost of production that is meant.

Competition merely insures that price differences correspond to utility and cost differences within a market field. We may consider the sellers as having quantitatively different supply schedules—say higher or lower cost curves—but if their products can correctly be regarded as interrelated on the demand side, and are plotted on a single demand curve, their several marginal supply prices are thereby interrelated also.⁵⁵ This is quite in line with the equilibrium theory of value presented in the present work.

As to the relation of price to competition, two cardinal errors are made:

(a) "Price" means nothing definite except *per unit* of product. The high price of a Cadillac may be no higher per unit of car than the low price of a Ford. It is misleading in many cases to say that, because the products differ, the price factor is not decisive. If I want a high grade saw, I pay a "high" price; if I do not, I buy a cheap one. Within each class, the price demanded by the seller may influence me, according to my individual demand schedules for the two classes of saw.⁵⁶

(b) It is illogical and unscientific to assume the prior existence of a price, and to treat the assumed price as a cause of so-called demand and supply. Insofar as economic theory is concerned, it is meaningless to regard demand and supply as being price-determined quantities of goods.⁵⁷ By the same token, we must not think of competition as being a condition which depends upon prices; we must treat it as expressing desires, costs, and purchasing powers, and as functioning in the determination of prices.

Furthermore, price policies, like adaptations made by the producer in competing products, are just a part of the competitive process: they are conditioned by or represent the motivating forces

⁵⁵ A producer of branded canned peaches may, by advertising or otherwise, "create" a "goodwill". This condition, however, is notoriously transitory. It is the generally observed fact that competition forces his market to join the general market for canned peaches of the kind or grade to which his product belongs. It is the essence of competition to insure that if his product be especially fine, his price will be higher in proportion, and no more.

⁵⁶ Of course, specialization in production *may* reduce the number of sellers in each "market", and thus facilitate or even cause a condition of monopoly.

⁵⁷ See below, p. 279ff.

(desires, etc.) which determine the primary demand and supply schedules. (In the case of producible goods, at least, the quantities available depend upon the relation between these schedules, tending to increase when the marginal bid exceeds the marginal offer.)

As to the role of increasing or decreasing costs, several considerations appear to offset the points made by the "monopolistic competition" economists. In the first place, the error of treating a historical cost schedule as a supply schedule in a given market at a given time, should be apparent.⁵⁸ At any given time, a supply schedule or curve of competing sellers' supply prices is always ascending, or positively inclined,⁵⁹ so that we need not be concerned about an individual producer whose costs may be decreasing. In the second place, there is no reason why a condition of decreasing costs may not be shared among all the competing producers in a given industry, in which case there need be no tendency to monopoly. Finally, one may ask why one should consider costs apart from demand? If the demand curve falls more rapidly than the cost curve of any given producer, there may be a marginal equilibrium which may represent individual outputs that are much less than the total, and therefore are not representative of monopolies.

One of the most fundamental shortcomings involved in the thought of the monopolistic-competition theorists, is the tendency to keep the enterprise factor out of the game, or to treat profits as tending to disappear. Enterprise, as a coordinate factor of production, functions most actively in competition. As the quantity of products increases, not only do the "expenses" paid by enterprise tend to increase, but also the "real costs" pertaining to the functions performed by enterprise. The supply quantity of enterprise ability is limited, and as the size of a business unit grows, diminishing returns to enterprise may appear in a reduced gross profits per unit of product. Under "monopolistic competition", business hazards may actually be increased, and certainly enterprise is apt to spend even more in sales effort, advertising, and other entre-

⁵⁸ See above, p. 32; below, p. 328ff.

⁵⁹ See below, p. 278f., 292f.

preneurial activities, and to require even more profits, than under complete or perfect competition.

From the standpoint of long-time equilibrium, enterprise is to be regarded as the adjustable factor: in coordinating the other factors so that they tend to be in equilibrium, the enterpriser himself makes adjustments, among which is an adjustment of the size of his business such that it will reflect his entrepreneurial ability.

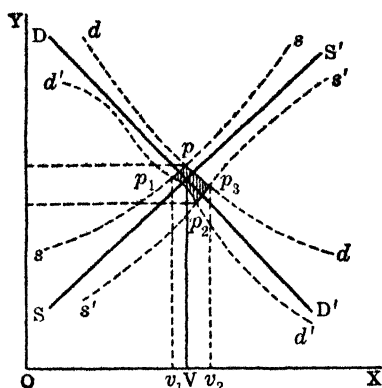
As to the adequacy of the concept of equilibrium at a margin, can anyone show how totals and averages can be in equilibrium if margins are not equalized?

In conclusion, we may agree that a condition of perfect, complete, or pure competition is rarely if ever found, and that it is a service to emphasize the realities in this respect. We may agree that monopoly is not the exact opposite of competition, and that imperfect competition often arises from conditions other than monopoly. We may agree that there is less homogeneity and uniformity among economic goods and processes, and more of differences and differentials, than Classical economics realized; and that totals are mostly differentials built on margins, rather than products obtained by multiplying an average by a number of units. Obviously, too, imperfect or incomplete competition makes marginal-productivity theory impracticable.

But we need not conclude that economic theory based upon the hypothesis of a competition which is sufficiently complete to insure effectiveness of individual choice according to the requirements stated on pages 130-132, should be abandoned. Competition is to be considered as entering the determination of economic values through its effects upon individual buyers' bids and individual sellers' offers. It affects the primary demand and supply schedules in given markets. Thus, if competition be incomplete or imperfect, we may think of these schedules as being not lines, but bands or zones, the width and shape of which partly depend upon the degree of competition which exists. The value and price may, therefore, not be so exactly determinate as it would be under "perfect" competition. This, however, does not require any essential change in the theory that value is determined by causal forces at an equilibrium

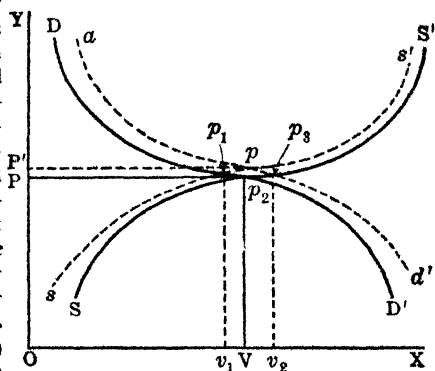
point—or in an equilibrium area.⁶⁰ Moreover, it is probable that the spread tends to be narrower in the neighborhood of the equilibrium area.⁶¹ And in fact, the difficulties which the monopolistic-competition theorists see are largely the result of imperfect theory: *when we deal with homogeneous series of units, and keep our demand and supply schedules in terms of subjective values, much of the trouble disappears.*

(2) *Qualitative Aspects.* Competition can be intense, and complete or “perfect” in that sense, without being qualitatively good—without being *efficient*. For example, no matter how prevalent or



⁶⁰ The following diagram illustrates this idea. Under “perfect” or complete competition, demand and supply are represented by DD' and SS' , and the quantity exchanged by OV . With imperfect or incomplete competition, the demand schedule is $ddd'd'$, the supply schedule is $sss's'$, and the quantity is some point between OV_1 and OV_2 . The value lies in the area $pp_1p_2p_3$. It will be noted that the spread between upper and lower limits may vary irregularly with variation in quantity.

⁶¹ It seems to me to be probable that the spread between the upper and lower limits of the demand and supply schedules will usually be narrower, and the price therefore be more precisely determined, within the range which accompanies the ordinary or usual quantity exchanged. As explained later, the typical demand and supply schedules are more nearly elastic within the range between shortage and surplus. (This, alone, would mean more nearly “perfect” competition.) In addition, may we not assume, for example, that as the quantity of the good or the number of potential buyers is reduced, either (1) the differences among the bids (the desires or the abilities to pay) of the fewer buyers increases, or (2) only one or two buyers remain? Certainly, as we approach the points of either scarcity or excess, we are more apt to find gaps or wide differences between adjacent items in the series of bids or offers. Thus the situation may be illustrated by the accompanying diagram.



intense competition may be, if it be carried on among competitors who are ignorant of their own costs or market conditions, there can be no assumption that the result will be economically "good". Cut-throat motives, too, may lead to a bad sort of competition, qualitatively speaking, regardless of intensity. In short, "wasteful" or "destructive" competition is a matter of quality, or efficiency.

The question here is, What results does competition bring? And this leads to the question as to a standard—what is the test of "good" or efficient competition? Frankly, the author has found himself unable to present any answer to this question. He would ask, Who knows? Is this, again, not a matter of qualitative values concerning which one must either fall back on the intuitions of some leader, or else rely upon the composition of the forces which enter into the determination of choices by individuals? In fact, it seems that one could possibly be justified in defending an obviously "bad" set of results which might be described as chaotic and wasteful, on the ground that this condition is best in the long run as being the only way to eliminate inefficient elements and at the same time stimulate the most efficient.

Yet it seems that something can be said. If we assume that competition is at all desirable, and that it is probably *somewhat* good in general as tending toward the selection of the more efficient producers and affording the possibility of a maximum gratification of wants, then we can say that *the quality or efficiency of competition depends upon allowing individual choices to work in such a way that they will lead to a balancing of individual costs and utilities*. The words, "in such a way", are of great importance in this statement, and two thoughts occur as to what such a way involves. The first pertains to the character of the individual competitors. Obviously, if the competitors are intelligent, and if they have a knowledge of conditions in their fields, including both the opportunities available and the costs of producing, we have a condition which is much more likely to work toward a balance of costs and utilities than otherwise. The possibility of determining cost in an industry, and the existence of the knowledge thereof, are essential to the "efficient" working of competition. (Accordingly, in those industries

in which technical conditions make these conditions impossible of realization, competition cannot work efficiently.)

Again, the existence of a reasoning attitude and a capacity and disposition to reflective choice, is an attribute of competitors which seems desirable. And fully as important as these matters (i.e., intelligence, knowledge, and reason), is the existence of a social point of view. There is no reason why the individuals in any business or industry may not compete widely and intensely, and still have a full realization of their interdependence within the field of competition, as well as their relations to producers and consumers in other business fields. They may fully appreciate their duties as well as their rights, with relation to their fellow citizens. If competitors had such a realization and appreciation, it is hard to believe that competition would not be more efficient and of a better quality than otherwise.

The second suggestion that may be made bearing upon the "way" in which competition can be appraised from a qualitative point of view, pertains to the conditions of the competitive game. Many points may be made, but it is not the purpose here to discuss the subject exhaustively, and only two will be mentioned as outstanding. One concerns mobility: competitors, if they are free to move into or out of the competitive field—that is, to start in business or retire therefrom—are likely so to act as to make competition itself more efficient.

Again, there is the matter of the rules of the game. Here the whole subject of so-called "unfair" competitive methods arises. It seems likely that in the future one of the lines of greatest progress toward the development of a more perfect society and the establishment of economics as a social science, will lie in the determination of the rules of the competitive game. In other words, the scope of economic life and of Economics, is likely to be limited by the application of ethical and political tests, as well as by the education of individuals to a realization of their economic interdependence in society.

In large part, the discussion comes down to this: If we knew who the "best" individuals are, we would uphold them, and elimi-

nate others. But how many of us can agree on this subject! Then if we do not know who the best individuals are, it seems that we must let some competitive process do the discriminating and eliminating for us. There will be a question as to whether those eliminated are actually the "worst", but if we follow the foregoing suggestions, we must recognize that the competitive process of selection may be relied upon with greater assurance than any scheme of social planning that has yet been proposed. Put the matter as a choice of evils, if you will. Still the conclusion can hardly be escaped that competition is the lesser of the two evils.

Here, too, should be mentioned the effect of competition in educating individuals for cooperation in society. It provides an opportunity for self-expression, which may contribute to happiness as well as to the development of special capacities.

As a matter of fact, if we do not rely upon competition in *economic* life, we are driven to rely on some sort of competition of a political character. This would exist in the shape of competition of rival social planners, and—if rational at all—would involve questions of political and ethical values which would be fully as complex, and probably subject to less tangible measurement, than would be the economic competition.

8. Does Competition Tend to Destroy Itself?

The question which may arise at this point is this: Does competition necessarily defeat itself? Does it tend to become extinct because the self-interest of the competitors, guided by reason, leads them to "cooperate" in the matter of fixing prices and production quotas? Under such a condition, even if there were not complete monopoly, there would probably be so little competition that it would be neither logical nor expedient to assume its existence even for abstract scientific usage.

The answer to such a question must depend upon the results to be anticipated by the individual competitors, and, from this standpoint, it seems to be in the negative. The individuals may think that their self-interest leads toward the establishment of some pool or cartel, but the history of such organizations by no means

leads to the conclusion that the results are what the individuals expect them to be. The crucial question is, Would profits in the long run tend to be higher under the contemplated monopoly than they would be under perfect competition? There is also a second question of importance, namely, If the prices and profits were higher under monopoly, which ones of the individuals would get the benefit thereof?

In answering these questions, we have to consider the following matters: (1) First, there is the nature of the total demand curve which exists in the market for the product in question. From this point of view, it may be found that the consumer's dollar is so preempted, or that there are so many substitutes, that the advantage of the monopolistic agreement is negated. (2) Then there is the matter of comparing a steady monopoly price level with the *average* level of fluctuating competitive prices, and it may be that over a period of time, the latter is as high or higher than the former. (3) As to the net returns to individual producers, it may be found that while some of them benefit under a scheme of proration, others do not, and the history of such agreements is full of breakdowns on account of dissatisfaction in this respect. Stabilization schemes, so-called, may have no more advantage than to make less bother for the participants, and it is doubtful if this is a sufficient motive. (4) Finally, the question as to the total net return may be raised. After all allowance for cost has been made, giving due consideration to the probable reduction in volume of output as affecting cost per unit, will the monopoly be conducive to efficiency?

Where competitors refuse to compete, competition obviously will not work. In such a case, we either have no production, or we have the necessity of a positive regulation of production by some social agency. In any case, however, it is important to retain the competitive background, and to maintain the largest potential of competition that is possible. Even in regulating a monopoly, it is usually found that the tests applied, are those derived from an understanding of the competitive process.

Logic suggests that the answer to the question here raised should

be made dependent upon fair objective tests; that is, upon the working of the system, with due consideration for the possibility that conditions may be established which would allow more complete and better competition—which would be favorable to the best results under competition.

9. Complete State Control Not the Only Alternative

Another question that is often asked is whether the alternative to competition be not public ownership. In other words, is the alternative to competition, collectivism? The answer to this question seems fairly definite. The conclusion has been reached that the competitive process furnishes the best basis for judging the economic efficiency of operation of any industrial concern. Now it may be concluded that, assuming state intervention, such a basis can be applied only when the enterprise in question is being regulated, not owned and operated. For example, where a private monopoly is found to be necessary, "regulation", as opposed to "control", is to be defended on grounds of economic principle.

Under such a condition, the regulating authority can do more than eliminate high-cost units, and charge "joint costs" to various product units according to the intensity of demand—thus simulating the results of competition. It can also proceed to regulate rates of charge with the idea of making society, as it were, a single buyer of the product. It can then proceed to experiment in an objective way with the idea of seeing how low the price can be fixed. Thus, through bargaining, a sort of equilibrium between demand and supply can be attained, and may approximate the results of competition. When a single seller is confronted by a single buyer, neither having the power or the will to dominate the other, conditions simulating competition are possible. If, however, under a system of collectivism, the industry were owned and operated by the state, the situation would be essentially different. The "buyers" and the "sellers" would be essentially the same persons. Almost of necessity there would be collusion! In practice, politics is bound to enter the business, and political values become confused with economic values.

10. Monopoly Tends Toward Collectivism

But while competition does not seem to require as an alternative the development of collectivism, it seems true that private monopoly, if accepted as a general principle, does lead inevitably to collectivism. If individual choices, expressing desires and aversions, are not to be allowed, then it will be found necessary, by state action, to protect one group from another, and to direct some sort of collective balancing of production and consumption. Men in their capacity as consumers have never long tolerated monopolies of producers; nor does one producer look with complaisance upon the monopoly advantages enjoyed by another. (Thus again we note the importance of recognizing that competition is not to be defined merely as the absence of monopoly, any more than monopoly is merely the absence of competition.)

Under collectivism, which means *control* of industry by the state, as opposed to mere regulation, we find the same difficulties as are found under individual initiative and competition, but without the possible advantages which may be found in competition. This is another illustration of the idea that extremes meet. For example, those who decry competition as involving the destruction of weak individuals by the strong, will find the logical counterpart of such abuses in the coercion of individuals by public authority when collectivism exists. Those who bewail the wastes of competition need only consider the enormous wastes that attend the capricious experiments of dictators in collectivist states, perhaps recalling the policy of buying silver or various actions pertaining to so-called crop control in the United States in the middle '30's. Those who find discrimination by private business concerns to be an evil will also find plenty of discrimination among classes and sections of the country in a collectivist organization. Without pushing the matter further, one may mention graft, unprogressiveness, and the like. Certainly nepotism is an evil in business, but it is never more rife than in a collectivist state. False prospectuses and false advertising may abound under competitive conditions in business; but are they any more striking than the false promises which

the heads of collectivist states make to their followers, promises of abundant life and the like?

In short, whether under collectivism or individualism, there is a similar problem of intelligent and informed leadership.

Again, whether under collectivism or individualism, monopoly is monopoly: Monopoly may be public, or it may be private. We sometimes appear to suppose that because a monopoly is operated by some political authority, it is therefore in the interests of the society which that political authority is assumed to represent; yet it would be hard to demonstrate that there is any presumption to that effect.

II. "Production for Service"

The slogan, "production for service",⁶² is an ancient one. The thought of it arises at this point because so-called production for service can become possible only under one or the other of the two extremes—extreme individualism or extreme societism. Thus in the case of an isolated individual economy which may be approximated in the case of a backwoods family in pioneer days, we may have production carried on under the authority of the father or some group representing the little unit, and directed with the idea of service without reference to any exchange value or any individual self-interest. At the other extreme, would come a collectivist state in which the workers were regimented either through a spirit of altruism or duty, or by means of coercion. In this connection, one remembers that such colonies as Amana start with a selected group of individuals whose closely similar ideas bind them together somewhat after the fashion of a family. Then, as time passes, the several individuals have families (1), and the children rebel against the system. Such is history.

But returning to the phrase, "production for service", one notes that the obvious question is, What is a service? How does one know if this, that, or the other act which may be designated as a service is in reality worth while? These questions bring us at once

⁶² Not to be confused with "production for use", which means the producer's own use.

to the heart of the competitive process, for if we abandon the process, we must realize that there is no way to know what the economic value of anything is. There would remain only the intuition of the dictator or leader as an alternative. It is upon the efficiency of competition that we must depend for the determination of the relative importance of goods in any way that can be objective or generally recognized.

12. Competition as a Positive Force

Perhaps the chief shortcoming of the economist's treatment of competition in the past has been that he has generally regarded it as a negative matter, and has conceived of it as existing primarily as a means of eliminating the unfit. It has been the devil, whose function is to catch the hindmost! One might as well think of competition in sport as being chiefly desirable from the point of view of killing off the careless or those who have weak hearts. Competition and the competitive system, if they are to prevail and to accomplish the results which have been indicated as possible, must be regarded as a positive and constructive way of organizing economic life. Whether in business or elsewhere, such rivalry as is called competition may have an educational value. It furnishes an outlet for activities and the tendency to self-expression. It encourages experiments on a relatively small scale, and thus with the minimum of waste.

It has become a commonplace among those economists who accept the idea of economic law to point out that competition is in fact a sort of cooperation. And is this not indeed the truth? Competitors must play the game *together*. More than that, it may be said that cooperation must itself be competitive, or otherwise it will fail. Prizes, praise, special rewards, etc., are resorted to in so-called cooperative undertakings, with the idea of adding the necessary incentive which is characteristic of competitive action.

So regarded, competition should be considered as a sort of "force" which can be improved and directed. The competitors may be made fit for competition in a way analogous to that in which the competitors in sport are fitted. There may be standards to limit

those who should compete. Then obviously there is the frequently mentioned fact that rules of "fair competition" may be established in much the same way that athletic councils undertake to improve various sports. Finally, there is the question of the goals of competition. It is even possible to exercise some desirable guidance of the competitive force in this respect. For example, the adoption of a system of progressive taxes, by limiting the possibility of wealth accumulation, exercises a distinct effect upon the competitive prizes to be won in the business world.

The idea of competition is not negative. It is not one of merely stamping out monopoly. It should be the aim of those who would contribute to the abundant life to encourage efficient competition. If it should be found impossible to make competition fair, or in other words, to eliminate unfair methods of competition, why should one assume that it would be possible to run monopoly fairly?

To go into such matters, however, would take us too far afield, and would not be germane to the main purpose of this work. The significance of the treatment here presented is merely to provide the basis for certain ideas which are essential to an explanation of the reason for accepting economics as the science of objective values. (The idea of competition is incidental to an acceptance of the importance of such values.)

Looked at most broadly, the main point is the establishment of an objective economic value. By the competitive process, we may "find out" what things are worth while, and even, perhaps, what life is for, in a way that would otherwise be impossible. Not that such an answer is completely satisfactory, but that it is more satisfactory than any other answer that can be found.

13. Complete ("Perfect") Competition as a Scientific Hypothesis

In conclusion, a few words about the merits of the economist's assumption of complete ("perfect") competition, are required. Does such an assumption involve too high a degree of abstraction? It is the author's judgment that we find a sufficiently large amount of continuous competition existing in economic life to allow an

answer in the negative. Certainly a large part of the evidence cited against the existence of competition consists of pathological cases, and it may be so easy to find cases of monopoly, just because they are the exception rather than the rule. It is to be remembered, furthermore, that business men usually have to go through a competitive process in order to attain monopoly. Certainly the history of monopolies warrants the statement that they have to deal with competition continually in order to maintain their monopoly! Under such circumstances, it is surely less abstract to assume competition than it is to assume monopoly.

Another question concerns the expediency of allowing economics to assume the existence of complete competition. Is such an assumption an expedient basis for the science of economics? In answer, we can say that it works. Reasoning based on the assumption of competition has been found to be of great practical value. If monopoly be the fact in any particular part of the economic field, so be it. We then deal with monopoly price—which, incidentally, is based essentially upon a competitive formula. If competition be partial and imperfect, so be it. We then make allowances for the effect of the imperfection upon the forces of demand and supply.

Competition is to be regarded as a process of (1) forming schedules of demand and supply, “arranging” bids and offers in order of magnitude, and (2) determining margins. Incidentally, it results in the elimination, temporarily or permanently, of sub-marginal items. Competition also is the condition upon which we depend for the coordination of industrial activities through the process of exchange. It is the essence of the so-called price system. And to the extent that competition is qualitatively “efficient”, it results in the balancing of utilities and costs in such a way as to tend toward the greatest economic good of the greatest number.

If there were any better way to accomplish these things, we could know it only by finding that it would have better economic results. The author can find none. He can, however, see great possibilities of making competition both more effective quantitatively, and more efficient qualitatively. We will therefore consider economic Value and Distribution as based upon individual choices effect-

ated through competition, which covers a wide field, embracing not all of economic life, but the greater and more important part. Value, as determined by complete competition under conditions tending toward efficiency, is the economist's "best", as opposed to monopoly price or government price-fixing. Value is, in this sense, a sort of scientific goal. The test is its correspondence to the degrees of relative importance that are generally recognized by individuals in society.

In this sense, value is economic truth.

Chapter III

THE GENESIS AND GENERAL NATURE OF VALUE¹

INTRODUCTION

Economics deals with, and is based upon, choices made by the subject (a mature individual man) with reference to external objects (goods). These choices, we say, are made by the subject; but all we really know is that they are made (occur), and that they are

¹ Selected bibliography on general nature of value, with especial reference to social and economic values:

- B. M. Anderson, *Social Value* (1911), X.
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motivated and conditioned by the physiological and emotional tendencies ("tensions") which characterize the particular organism, and the external stimuli of the environment. They reflect the nature of the subject—man, the living organism—and the "adjustments" which he makes on account of external and internal limitations.

Without going into the question, What is life, we may assume that it involves tendencies toward acts related to the existence or survival of the individual subject, of which tendencies the mature subject becomes more or less conscious. They find expression in "wants" or "desires", and lead to motivated activity. *They determine the "ends" toward which the subject tends.* Choices, however, are always *limited* by the nature of external objects, which objects, taken together, constitute the subject's environment. These objects are to be considered as the "means" with reference to "ends" (desires).²

To understand economic life and the "values" which characterize it, a primary essential is to understand the nature both of the subject and of the object, and especially the relation between the two. In other words, we must understand subjective values and objective values, and their relationships. Thus only can we avoid the unreal extremes of subjectivism and objectivism. Thus only can we get as near as possible to an explanation in causal terms of the phenomena of economic life, or in other words, establish a science of economics.

Let it be emphasized at the outset of this inquiry into the origin and nature of value, that economics is concerned with the motivation of *mature* individual organisms. The theory here presented is concerned neither with the origin of man, nor with the question whether his tendencies to activity are innate, or "learned" in infancy and youth.³ It will consider the "subject" or the "individual",

² Cf. above, pp. 30, 55, 88f. and below p. 178f.

³ If we were dealing with the problem of social reform, or even with "evolution", we would have to consider whether and to what extent men's motives are innate. Obviously, to the extent that men are what they are because of learned or acquired characteristics, they can be made different by subjecting them to different environments from birth to maturity.

as he will be variously called, to be a human organism which has been born, and which has developed to a point where "it" can function in economic life. Thus the subject or individual is characterized not only by certain innate organic "drives" or tendencies, but also by numerous learned behavior tendencies such as habits and sentiments, and he is capable of "purpose" with reference to economic goods.

THE OUTLINE OF VALUE CAUSATION

Obviously, any study of human motives involves much psychology and a good deal of refinement and subtlety. Accordingly, there is presented next an outline of the stages which are involved in the development of economic value. The purpose of this procedure is to allow the reader to range rapidly over the field to be covered in this chapter, so that he may more readily see, as parts of the whole, the several phases of value causation as they present themselves for detailed analysis. The problem being to explain how the quality of value is *caused*, the several links in the chain of value causation may be outlined, as follows:

(1) We start with the assumption that each "subject" has potentialities for certain physiological and related emotional disequilibria or tensions⁴ within himself, which, together with habits and sentiments,⁵ control both his responses to stimuli and his motivated behavior. In other words, we assume that the subject shows tendencies to activity with reference to objects, which tendencies are to be called desire tendencies, or desires. Taken together, each subject's set of desire tendencies at a given time, will be called his "*desire disposition*". (Probably one may also find, underneath and included in desire tendencies, a simpler set of tendencies which do not serve to "motivate" action, or at least not sustained, purposive action, which may be called the subject's "*want disposition*".)

(2) The process of valuation then begins with a *stimulus* which causes some reaction in the subject. Without regard to order in time, there is the external stimulus which comes from some object

⁴ E.g., hunger, fatigue, fear, etc.

⁵ E.g., love, hate, etc.

in the environment,⁶ and which takes effect in initiating some response; and there may also be an internal stimulus, coming from some inner physiological state of tension.⁷ This internal condition sustains and directs the external stimulus.

(3) Meanwhile, the mature subject senses the existence of *the "object"* which is the occasion of the external stimulus, and consciously or unconsciously assumes its reality. (So it seems to a mature observer, at least, who might say that the subject "perceives" the object.)

(4) Now one is in a position to understand the generation of a more or less sustained tendency of the subject toward the object, which tendency may be described as a *want*. The individual, without being conscious of motive, or knowing the means of satisfying it, tends to act ⁸ in a non-purposive way with reference to the stimulus that comes from the object. He may come to "feel" a sort of vague general appreciation of the object, which may be described as an imputation of *utility*.

(5) Next comes *activity*, usually in the form of effort. This activity, being not directed, or specifically adjusted to fulfilling the motive, results in various reactions being tried. The subject goes through a process of learning, in the course of which he acquires habits, or "mechanisms", which are learned behavior tendencies. These modify the "drives" of his wants.

(6) Then *adjustments* are made. The subject, in his undirected and generally (non-specifically) motivated activities, meets obstacles. He finds hindrances which thwart the direct satisfaction of his motives or gratification of his "wants". These hindrances may be material obstacles in his environment, or conditions of incapacity or conflicting motives within himself. The subject becomes conscious of the gap between him and some object. As a result, adjustments are required—adjustments between conflicting tendencies,

⁶ E.g., the smell of a beefsteak; the title and appearance of a book; a pin prick; etc.

⁷ E.g., contraction of stomach muscles (hunger); habitual or learned "mechanisms" causing one to read, etc. Such stimuli may be "emotions".

⁸ This "tendency" may be the result of much conditioning and learning, as the psychologist explains.

and adjustments to learn the way which relieves a particular want tension or satisfies a motive.

(7) As a result of hindrances and adjustments, and habits, the subject's motives become more purposive. From wants, they develop into desires (as explained on pages 170 and 178f.). By desire, the author means a motive which is directive and selective—one which tends toward specific activity. It involves purpose: when the subject "desires", he is conscious of both end and means. Desires may be positive or negative. In the one case, the tendency is toward some object; in the latter case, it is away from the object—a tendency to avoid, or an aversion.

(8) The existence of a specific, purposive motivation with reference to a particular object, enables us to conceive an intensity of motivation or desire. This is a *degree of utility*—a quantity. It may be measured by the obstacles which an individual overcomes to fulfil the motive, or gratify the desire. It seems that the individual may be conscious of the intensity of his desire for an object, and that this consciousness may be described as a "primary value" or a "subjective worth".

(9) In many, perhaps most, cases, comparison must now be made—*comparisons of degrees of utility*. (Note that at this point we find the possibility of so-called "opportunity costs", which arise when one thing must be forgone for the sake of another.)

(10) Comparisons of the degrees of utility of two or more objects result in *subjective values*. One object is thus evaluated by an individual with reference to another object, and we now have "secondary value".

(11) Now there may ensue a *realization of the advantage of exchange*, in which case we find a highly developed form of "purpose". Another individual may possess one of two objects of my desire, and if I am motivated by a stronger desire for the object which he possesses than for one which I hold, I tend to act accordingly. (Incidentally, I may now be participating in over-individual values, resulting from my relationship with other individuals.)

(12) The *will to exchange* may now enter, leading to action, in which case I make a bid or offer, which represents my "demand

price". The decision may be a result of careful consideration and reflective choice. Or it may be the result of a mere "impulse", by this meaning the result of emotions which facilitate or inhibit stimuli, and thus motivate activity.

(13) Finally comes the act of *exchange*. This results from differences in subjective values (paragraph 10) and comparisons. Different individuals, motivated by different physiological tensions, habits, sentiments, and purposes, seek to reduce their tensions and satisfy their motives by exchange. In this case, the comparisons are not made by a single individual. As long as values are purely subjective, they are either mine or yours. It is only through the medium of exchange, and markets, that values become objective—become attached to objects and appear in the rates at which they are exchanged for one another by different subjects.

(14) Thus value becomes known objectively, and it may be said that the value of a given object is twice that of another object, or perhaps that its price is \$10. Such is *objective value*. It is more impersonal, and it involves more complex reactions and tendencies toward the object, regarded as a means, than does a simple individual appreciation (primary value), or a purely subjective value (secondary value).

It must not be thought, however, that such objective or tertiary values are qualities of objects in any absolute or physical sense. *Like all values, they are on a different level from qualities as perceived by the senses.* They vary, or may vary, quite independently of any sensory stimulus, and the same object may at one time have great value and another time have no value at all. Moreover, reflection often colors or changes values in a way that is hardly possible in the case of sensations. As has often been pointed out, the subjective value of a meal to a man who is replete with food may be zero, this depending upon his immediate feeling. Even such a man, however, probably would not give away an article of good food, and certainly he would still "value" food, because he would have learned its importance with relation to an organized system of desires.

Of course, all of the foregoing "steps" shade into one another,

and are merely developments in the reactions and tendencies of a subject toward an object or objects.

In these various phases of the causation or genesis of value, we find the *bases of the forces of demand and supply*. The basis of demand, which will later be considered as a market force, lies in desire and the will to overcome obstacles lying between the interested subject and the fit object. While related to a particular object, desire and demand are conditioned primarily by the "desire disposition" of the subject. On the other hand, while related to negative desires, the force of supply is found in the limitations, efforts, and adjustments which turn wants into desires, and these are conditioned primarily by the object.

Thus one is enabled to arrive at a clearer concept of economic life and value as an equilibrium.

Incidentally, the economist will observe that a classification of several stages of economic value is implicit in the foregoing sketch. It has appeared that there are certain relatively simple reactions by the individual, which may be called "primary values". These include utility (wants), marginal utility (desires), and subjective worths (desires limited by costs). Out of these primary values, there develop the somewhat more complex "secondary values" which involve the individual's comparisons and choices among the primary values. These are "subjective values". Finally, in a society in which individuals are effectively motivated by their subjective values, there arises the phenomenon of "objective values", which may be measured in "prices". These objective values may be described as "tertiary values".

The foregoing outline makes it possible now to enter into the more detailed analysis and explanation of the main factors in the causation of value, which comes next.

A. Value as Desire-Intensity; Primary Values

So-called primary values concern the importance of one object to one subject. They are simple tendencies to react to the stimulus of a given object, and exist in two degrees—wants and desires.

1. Simple Reaction Tendencies, or Wants

The first faint trace of the phenomenon of value is found in the reaction of some individual subject towards an object in his environment. Take the simple case of one's response to the stimulus of a shade tree in summer or a fire in winter. We start with a simple tendency—a physiological "tension" or "drive"—toward a more normal temperature. The subject tends toward coolness in summer, and toward the warmth in winter. This tendency is touched off by the appropriate stimulus, the shade tree in summer, and the stove in winter, the subject having learned early in life to associate coolness with shade trees and warmth with stoves. Here we find a "want tendency" which points toward an object in a way which occasions a "primary" valuation.

At once, one notes that the situation involves the existence of two realities, a subject and an object. The valuation exists as a more or less purposeless reaction, accompanied by a more or less vague feeling, which is highly subjective, in that it is determined more by the nature of the subject than by the object. It is an unreflective tendency, and one which need involve no choice. (The thing just "feels good".) This tendency, however, is inactive until a stimulus is felt, and then the stimulus is associated with an object.⁹ Action takes the form of the subject's motion toward the object; and as he approaches it, two phenomena occur: (1) the desire tendency or drive is reduced, and (2) sensations of coolness or warmth are experienced. In other words, the tendency toward the object is checked, and the want for the object is gratified. Thus an equilibrium may be established.

The coolness or warmth is, in this case, felt as a quality of an object—the shade-giving power of the tree, or the warmth-giving power of the stove. But this quality is not of the same order as are such qualities as weight, extension, or, probably, color. It is more

⁹ H. W. Schneider in the article on "The Theory of Values" referred to in the bibliography on p. 161 says that the value situation involves and consists in (1) a valuable object, (2) an organism, to which it is valuable or by which it is valued, and (3) an end or purpose, with reference to which it is valuable. This comes very close to stating my position exactly.

dependent upon the desire-disposition of the subject. The subject can change or destroy the quality that is here in question. It depends upon his feeling as to the reality and the nature of the object. In the case of weight or extension or color, however, he has learned that they go with the object—the tree or the stove—and exist whether here or there. They are felt to be *directly* dependent upon the nature of the object.

In fact, the simple reaction to the object, in this case an organic want, and sensations which gratify the want, occur within the organism of the subject. The utility-feeling derives from the want, and though, like the physical qualities of extension, weight, etc., it is in a sense dependent upon the object, there is an awareness that the object must be in touch with *me*. I may be conscious that later on I may not want it as much. I may know that another person might not want the object as I do.

In short, such "primary values" as are represented by this case of simple appreciation, are not attributes of objects, or in any sense inherent in the object.¹⁰

This is a mere want tendency, and is what the economist means by "utility". It is a simple, vague tendency, non-purposive, and involving no reflective choice. It is wantedness, *regardless of quantity*, and thus has *no measurable degree of intensity*. For example, we "want" even "free goods", and they therefore have utility, or primary value. This appears most clearly when we think of their "total utility", for then we realize that if they were very scarce, our desires for them might be intense. In the case of such necessities as water and air, our worth feelings or wants may be affected by our realization that increased scarcity might bring a high marginal utility. It is in this sense of total utility, that the old English economists generally used the term, "value in use", saying that water has more of it than diamonds.

¹⁰ On the other hand, it should be noted that "utility", as Laird well points out, is not the sensation of satisfaction actually yielded by a good. It may be more nearly in proportion to the satisfaction an individual thinks it yields, perhaps through conjecture or mistaken imputation; and anticipated satisfactions of wants may not be equal to those actually realized. (*Idea of Value*, pp. 6-8)

2. Lack-Feelings, or Desires, and Subjective Worth

But the subject often has the experience of finding that the object—the shade tree or the stove—does not come to him. He has to go to it—to walk through heat to the tree, or to get up in the cold and build the fire. The stimulus coming from the object is then modified, and becomes somewhat less simple. Emotions (visceral tensions) connect the external stimulus with internal stimuli, conditioning them, and influencing activity. The subject becomes conscious that his want is conditioned by the object. In short, his reaction now becomes the more intense and complicated one which will be called “desire”.

A desire is a tendency in which the difference between subject and object is consciously recognized by the subject, whose reaction to the object is affected by a consciousness of dependence upon it which is not present in a mere want. Whether it has come from a stimulus from without or from an impulse within, the subject's vague want for some object, develops into a consciousness of lacking that object, and a feeling of its “worth”. This may be occasioned by some resistance, either within himself or in his environment, which makes an effort or sacrifice necessary in order to establish or maintain a relationship between subject and object.

Thus the desire-tendency is more *purposive*, and is apt to work with more specific relation to a particular tree or stove. It is also characterized by a degree of intensity, which varies, possibly being acute.¹¹ The individual may be conscious of the degree of his desire-intensity at a given time.

This second degree of “primary value” is the specific and measurably intense degree of utility, which might be called desire-intensity, and which economists usually call “marginal utility”. Like utility in general, marginal utility is a relatively simple tendency, not reflective, and not involving choices among different objects. But as regards a single object (a “good”), there is recognized by an indi-

¹¹ This phase of motivation is not covered by any term in general use among economists, unless it be “marginal utility”. Prof. Fisher has suggested “desiredness”, which would do very well. The author has usually referred to it as “desire intensity” or “desire tendency”.

vidual a *degree of scarcity*,¹² and therefore a limited possibility of want gratification. As already explained, the individual's want now turns into desire. The intensity of his desire for any one unit of a given quantity of the object, is the marginal utility of the object to him. This is the importance to him of the good—his motivation with reference to it—*considered alone*, in view of the quantity available.

When the positive desire is attended by negative desires or aversions, we find "*costs*" tending to counteract its motivating force. The balancing of positive and negative desires, results in "subjective worth". Thus marginal utility may coincide with subjective worth, in which case, for practical purposes, it may be regarded as determined by "subjective worth".

The foregoing cases of value as a want-tendency or a desire-tendency, involve only a simple response on the part of the subject. If these be called values at all, they may be distinguished as "primary values" or "worths". They are important in the theory of value, chiefly as leading to a better understanding of the more complex reactions which involve choices, reflective or other.

B. *Value as Judgment; Secondary Values*

"Secondary values" are values proper, since they involve choice, and the determination of the relative importance of two or more objects to one subject. These are "subjective values". Like subjective worths and marginal utilities, they are the importances of goods to individuals; but, unlike all forms of mere utility, they are the result of consciously determinative decisions, and the typical ones involve reflection. They arise out of the comparisons and judgments involved in choices among the limited quantities of different objects of desire.

Subjective values arise when reflection compares, analyzes, and organizes the direct and simple tendencies which arise as wants or desires, thus bringing out a fuller meaning of the object for the subject.

¹² Here, as always, it is important to recall that "scarcity" is relative to want, and implies utility.

The process thus generally indicated as reflection, involves judgment or reason—the adaptation of means to ends. It may further involve imputation. Judgment is a type of reflection which includes a conscious appraisal of an object as a means, or a comparison of two or more objects or of two or more desires.

The subject may appraise a single "means" to an "end" which is set by his desire, when he consciously considers going to a shade tree for the sake of its coolness, despite any desire to stay where he is, or aversion to the effort involved in going. He is "motivated", and views the tree as a means to an end. As the economist would say, he attaches utility to the good as a means of gratifying a desire. He makes a simple "worth judgment".

But the subject may compare several desire tendencies or ends, as for example, he may see two uses for the same good. Or he may compare several objects as means of attaining his end (desire gratification). In addition to plain judgment, therefore, we come to the important phase of motivation which arises when a *choice* is made. A choice is always conscious, and always involves a motivated activity which, under the influence of habits, sentiments, and purposes, is directed toward some particular means of satisfying the motive—the desire. It arises when desires clash or limit one another, as must often be in conditions of scarcity or limited supply. There then arises a conscious balancing of desires, or aversions, or desires and aversions. Sentiment and the will are involved, and a "choice" may result.¹³

It is this secondary order of valuation which is most significant for economic science, for upon it depends motivation of economic activity and the explanation of economic value and price. It is at this point that economics usually begins, and it is here that the error of hedonism has entered economic thought.

¹³ Probably Laird does well to warn that, while "utility" is "capacity to serve some end", we should avoid undue subjectivism or reliance upon simple individual feelings in considering what ends. He states that "much that is said of needs and of their fulfilment is psychologically but a guess and is known, in reality, from experience of a more objective kind". Moreover, he adds that "a mistaken emphasis is laid upon personal feeling in all matters of volition, conduct and choice. The reality, in these affairs, is immensely subtler and very much more intricate." (*Idea of Value*, p. 9)

C. *Imputation and Participation*

Finally, in the realm of complex reactions and tendencies, we have to mention "imputation". Worths or values may be imputed by the individual to an object without any *direct* primary response to the object by the given subject. Such imputed worths or values are indirect, in the sense that they are based upon a reaction of the subject which is not the result of his own primary tendencies toward the object—his own wants or desires. Thus an imputation arises, as Urban says, "from attitudes of the subject, negligible or irrelevant from the standpoint from which the actual value is determined".¹⁴

In economics, this aspect of valuation is most frequently illustrated by the case of the importance that men attach to things which are not desired for themselves, but only as a means or instrumentality for attaining indirectly other things which are so desired. Thus, I may have no interest in a machine, other than that which comes from the product which I impute to it. Thus, too, the importance we attach to money—which we say has subjective exchange value—is of this sort.

In any case in which an individual regards an object as being worth something beyond his own simple direct appraisal of it, there is also a process of imputation. For example, I may regard an object as having a certain "use value" to me, but if I am conscious that there are other individuals who regard it more highly than I myself would do, my attitude towards the object in question is changed. This is frequently the case in the matter of such objects as "antiques", for which men sometimes pay high prices although they have no direct appreciation of value in proportion to the price paid.

In such cases as the foregoing, we come to so-called *participation values*. Such values are characterized by the fact that they involve imputations which depend upon association with other individuals in a group. When one individual finds a generally-recognized (objective) value attached to a good, he may accept such a value,

¹⁴ W. M. Urban, *Valuation, Its Nature and Laws*, (1909), 25.

although he himself may have no desire for the object, or none proportionate to the generally-recognized value. It seems that so-called "prestige values" necessarily involve participation, since Mrs. Smith attaches an importance to some object which is derived from a feeling that Mrs. Jones regards it highly.

D. *Classification of Primary and Secondary "Values"*

This discussion of imputation and participation suggests that it is desirable to distinguish at least three classes or levels of valuation, from the standpoint of the subjective attitude of the individual.

(1) *Unreflective individual wants and desires* of the simplest sort, which may almost be called under-individual or sub-personal, since they do not involve the ordinary or normal inter-individual or inter-object relationships. At one extreme, they may be illustrated by an individual's vague simple attitude toward air or water under ordinary circumstances. At the other extreme, in cases of absolute necessity, the same individual may react to the same air or water in a much more intense, though equally simple, and unreflective way. These unreflective valuations may exist even if the individual be abnormally isolated, or if he be subjected to abnormal scarcity of necessities. They come under the general head of "utility".

(2) *Reflective individual valuations*, which involve judgment, and are apt to include a consciousness not only of the relationships among objects in the environment which require comparison and choice, but also of the existence of other individuals, often in connection with their competing claims upon desired objects. Here come all comparisons and choices, and reflective appraisals of means to ends, which arise directly out of individual desires. These include economic value proper.

(3) *Over-individual valuations*, reflective and unreflective, which motivate an individual as a result of participation in society. For example, an individual may not personally have any desire for diamonds, and if he were isolated, he would attach no importance to them. As a result of participation, however, his desire disposition undergoes a process of "ideal reconstruction", and he shows a strong

positive desire for diamonds. An important kind of participation value exists in the case of so-called "public wealth", such as public buildings, government-owned canals, and like objects. The individual may desire some service rendered with the aid of such things, but he can hardly respond to them as being among the "total assets" of the nation without being motivated as a citizen who participates with others in using them jointly. By himself, he either would not "have any use" for them at all, or would have a much simpler and smaller reaction to them. Whenever moral considerations enter into the individual's motivation and his desires conflict with those of other individuals, there is apt to be an opposition between what is and what "ought" to be. This also involves ideal reconstructions of individual valuations, as a result of participation.

One point to be observed here, is the fact that no matter what the kind or class of "value", it involves a relation between a subject and an object—between an individual man and his environment. In other words, value is neither inherent in things nor independent of them. Accordingly, it may be regarded as having two aspects, as set forth in the following section.

E. Value as a Relation between Subject and Object: Interest Value and Fitness Value

A complete and very significant statement is that values are "functions of the relation of subject to object".¹⁵ And it follows that we may approach the subject of value from either of two angles: We may approach it as (1) the reaction of the subject toward an object, his *interest* therein; or we may approach it as (2) the meaning of the object for the subject, the *fitness* of the object with reference to the subject's desire tendencies.

It is thus also apparent that there are two variables involved, and that values are conditioned both by the nature of the subject and by the nature of the object.

¹⁵ Urban, *Valuation, Its Nature and Laws*, 25.

1. Value as Interest; the Subject's Desire-Tendencies

It is possible to regard the simple "worth-feeling" of the individual subject as arising out of a characteristic "desire disposition" which determines his reactions toward objects. If we take this point of view, we are thinking of what may be called *interest value*. Probably all such "primary values" are, or represent, physiological or emotional tensions, habits, and sentiments of the subject. And we may think of them as giving rise to tendencies, or groups of inter-related tendencies, which lead toward some object.

This way of regarding value is apt to lead to subjectivism. It may be associated with idealism. These extremes, however, are not necessary, and may be avoided—especially as we are to consider the physical organism of the subject. At the very least, we are saved from such ancient thought diseases as the assumption of an innate "moral sense" or a principle of "self-interest".

Such valuation reactions involve, first, the stimulus of some object (which is not negated by any mechanism or learned emotional tendency), the object being recognized as a part of the world of reality according to the subject's experience; and second, a motivation of the subject toward the object, which gives it some meaning to the mature subject. Such motivations are often in the nature of wants. These wants may be simple or complex.

In their turn, the simple tendencies, which we describe as the subject's interest in objects, appear to come from three main sources: (a) organic wants, (b) reflex urges, or "instincts", (c) impulses. This classification reminds us that they constitute "tendencies" on the part of the individual which may decide his course of action.

(1) *Organic wants* are probably to be thought of as innate. They *do not depend upon external stimuli* in the way that instincts do. In fact, they depend more entirely upon the nature of the organism and the existence of disequilibria or tensions therein. All organisms tend to go through a series of changes which may be thought of as constituting the cycle of life. In this process, conditions of hunger and repletion, thirst and its slaking, cold and heat, fatigue and rest, etc., occur. These conditions are probably associated with the sur-

vival of the organism, including its maintenance and reproduction. They include wants for food (hunger), 'drink (thirst), oxygen (breath), heat or cold (normal temperature), rest, sleep, excretion, and activity. Such wants are recurrent and more or less periodic. At least, they may be completely satisfied; but once satisfied, they recur.

Thus organic wants are apt to lead to recurrent and alternating states of intense "drive" and satiation. It is especially important to note that they may lead either to "absolute values" (the starving man has no choice), or to satiety (the sated man makes no choice). In either case, the organic want becomes disassociated from choice, and therefore from value.

(2) An *instinct*, as the term is here used, is any reflex tendency, "urge", or "drive" in a mature organism, to react to external stimuli in a certain way, which is either innate or acquired in infancy, and which is directed to some end involving an adjustment of the organism to its environment. In fact, instincts may be regarded as modes of adjusting the organism to its environment, which are based on survival. Thus they find expression in reflex actions. To the extent, therefore, that desire tendencies are determined by "instincts" as thus defined, the subject may have no consciousness of the importance of the object.

It is not necessary for the economist to take any position as to what particular modes of adjustment are "instinctive", and psychologists are not in agreement. It seems both feasible and expedient, however, to proceed on the hypothesis that there are such reactions as gregariousness (desire for social approval), imitation (desire for conformity), self-display (desire to excel, etc.), and acquisition, which are "instinctive" in the sense of the foregoing definition. Such reactions are important in the development of a theory of value, in that they explain part of the tendencies of subjects toward objects, and thus enable us to understand in part the origin and nature of desires and human motivation.

(3) *Impulses* are tendencies to action which originate within the organism, perhaps as visceral tensions, and thus are not reflex as "instincts" are. At least, their connection with any external stimulus

is indirect and remote.¹⁶ They are derived from the inherited nature of the organism or the general conditions of its life, and give rise to tendencies which are often associated with what we call "temperament" or emotional states.

While involving no definite purpose or conscious end, impulses are generally released by some object, material or ideal. For example, a vague tension or feeling of unrest may exist, but the motor reaction may occur only when an appropriate object appears. Impulses may be physiological, as so-called animal appetites, or they may be ideal, as appears in such emotions as love, hate, interest, sympathy, and the like.¹⁷ Thus they are more complex than instincts or organic wants.

It seems probable that impulses are more dependent upon the character of the subject, and less upon environment, than instincts are. In fact, it may be that impulses are based upon emotions (fear, anger, hope, love, etc.) which result from clashes among instincts or organic wants.

In all these cases of simple want-intensity, there is no judgment exercised by the subject,—no reflection, no choice of means to an end. There is merely a tendency toward an object, which derives from the "desire disposition" of the subject at the time. Above all, it is important to note that there is *no consciousness of purpose; the relation between means and ends is not consciously realized*.

(4) The preceding point, however, leads to the level of motivation which has been described as *desire*. A desire is a consciousness of a want (organic, instinctive, or impulsive), accompanied by a *tendency to action*. It is a want become a "motive". Thus it involves volition. It arises when consciousness intervenes between some stimulus or impulse and the activity which tends to result. It is *purposive*, in that it is always related to some particular object known to be a means of fulfilling the motive.

Desires are based on a definite relation between a subject and

¹⁶ Shaffer suggests that they serve to connect external and internal stimuli, and thus facilitate or inhibit stimuli, turning them into "motives", and influencing activity.

¹⁷ These so-called ideals may possibly be explained as results of glandular conditions (thyroid, adrenal, etc.), wholly or in part.

particular objects, and tend to start a process of adjustment between the two. When simple tendencies, such as "instincts", result in activities, and these are hindered, we get desires. There is then a consciousness of a barrier obstructing the tendency-path which leads toward some object. Desires begin with some physiological tension or sensation associated with lack or disequilibrium; but they gain full character in emotion, or impulse to act in accordance with a tendency which may be described as an effort on the part of the subject to attain some object. In fact, a desire is at a maximum when the subject is "striving" to obtain a thing.

It seems, however, that desire tendency toward an object may persist and be present while the object is intact in one's possession, —at least when there is the possibility of losing it. This condition may be explained by emotions which persist after the stimulus has ceased.

There is implied in the foregoing statement the important fact that desires for different objects may vary greatly in intensity, ranging, for example, from the desire of a very thirsty man for a drink of water, down to the desire of an ennuied youth to go to a movie. Moreover, the desire for a given object may vary in intensity; for, if the desire-disposition remains essentially unchanged, the more of the given object that one possesses, the less the tendency toward it and the striving to attain more of it. (This may be said to be a psychologist's way of presenting the idea of diminishing utility.)

Finally, it may be said that a desire tendency may be dormant, and that it then exists as a "desire potential" or power to induce desire, associated with an appropriate object (a "utility") which may now be said to have "desirability" ("utility"), although not associated with any perceptible degree of desire intensity (marginal utility). It is as if the desire had relapsed into a mere want.

Values have appeared to arise out of the relation between subject and object, and obviously desire is an important element in such a relation. We may liken desire to a "force", as that term is used in physical science.¹⁸ When we measure the relation between two objects, and observe changes therein, we explain the changes as

¹⁸ See above, pp 59, 61, 70, 88

being the result of some force or forces. When one of the objects is, as it were, a "subject" (human being), however, and the so-called force is a desire, we perceive the danger of this analogy. Desires are often complex. A "subject's" relation to an object cannot be measured exactly or completely. Nevertheless, the concept of desire is important as a means of understanding human motivation.¹⁹ We do not know what the "forces" of gravity and electricity are, or how they work; and in a quantitative or scientific sense, we know still less about desires and other human motives. But in both cases, we can and do draw important inferences from observed relations between two objects or between a subject and an object.

In this sense, then, positive and negative desires, as motor tendencies, are like "forces", and help us to explain human action with relation to objects.

Owing to the frequent confusion in economic discussions of utility, it may be well here to note the relation which exists between *feeling* (in the sense of pleasurable sensations or of appreciation of worth) and *desire* (motivation to activity, or tendency toward an object, perhaps associated with feeling of lack, in the sense of disequilibrium).

On the one hand, the subject may experience a pleasurable sensation without any desire, as for example, when an object is a free good, such as air or shade may be. He may buy something which he does not desire, merely because it is "a bargain", and as such it gives him pleasure. Or the subject may respond to an object only as a result of "participation"; in which case the stimulus is built up by some habit or sentiment—a recognition that it is important because others with whom he has associated value it—although he *himself* has no desire for it. This motivation is found not infrequently in the matter of "style" goods.

Again, the subject may have desire without any pleasurable sensation. In the case of absolute necessity, such as extreme hunger or thirst or fatigue, the subject (and his feelings) may become, as it were, lost in the object. The drive of his internal tensions is so

¹⁹ Cf. articles by M. A. Copeland, Tolman, Dickinson, and Knight listed in the bibliography at the beginning of the chapter.

great that he may then not care what he eats or drinks, or where he sleeps! It is probable that the pleasurable sensations coming from rare or expensive objects are often not in proportion to the desire that is shown by the purchaser. In the case of ideals, also, there may be desire without pleasurable feeling, for reflection may give rise to desires which even run counter to feelings, as may be illustrated by the labor of scholars.

Thus desire-utility is to be distinguished from gratification-utility, and the two may not be equal, or may not even vary in the same direction. While this lack of necessary relation between "feeling" and desire has a negative importance as correcting some tendency to error in economic theory, it must be added that in the cases just mentioned, there is really no value causation, because either there are no choices, or the desire is not the effective motive in the subject's attitude toward the object.

(5) *"Desire Disposition" and Judgment.* The discussion has been tacitly assuming the nature or character of the individual subject, taking his tendencies and reactions for granted. It is desirable, however, to consider briefly some of the factors which enter into the determination of the wants and desire tendencies which manifest themselves. These we may term collectively the "desire disposition". They constitute—or rather, perhaps, depend upon—the character of the individual, including his physiological tensions, the structure of his organism, his instincts, emotional make-up, habits, and will—whatever that may be.

In the first place, each individual has a certain biological structure, including a nervous system, an alimentary system, a reproductive system, and other biological elements in his organism. Certain endocrinal glands profoundly influence all individuals.

In the second place, he has a certain set of psychological reaction-tendencies which are either innate or subject to but slow modification. Here come, for example, his organic wants, his elementary reflex urges ("instincts") and his "temperament". The latter term is taken to designate the condition which governs his impulses. Individuals may be slow or quick in their actions. They may be "warm" or "cold". Such conditions help to determine the amount

of stimulus which may be required to call forth activity and choice. Perhaps it is in this respect that racial and national characteristics are most pronounced.

Then there are the phenomena of "memory", "imagination", and judgment or "reason", phenomena which in the past have often been called "faculties". They largely represent what the organism "learns" in the shape of habits and acquired forms of organized emotional tendency, although the learning may be conditioned by inherited capacities.²⁰ These correspond to characteristics of the individual which we may call psychological reaction-tendencies. It is necessary only to mention the fact that "memory" of past experiences, including values, and imagination with reference to future values, play an important part in reflection and choice. Judgment, or reason, differs among different individuals,²¹ and is thus to be included under the foregoing head. It concerns the characteristic tendencies of the individual in dealing with the adaptation of means to ends, which involves quantitative values. The degree to which "reflection" controls impulses, differs greatly among different individuals, according to habits, sentiments, and purposes.

Clearly, "reason" and desire, though two different phenomena, are interrelated when valuation responses are made by a normal mature individual. Not only does "reason" serve to direct and select among desires, but also it may influence the nature or intensity of a desire. This is apt to be true whenever choices are made under conditions which allow reflection. Thus the sex urge brings "desire"; but reason may bring "preventive checks", to borrow a term from Malthus. Judgment also seems to be necessarily involved in imputations, which transfer values from one object to another, the latter becoming the means appropriate for fulfilling desire-tendencies toward the former, and thus entering motivation.

²⁰ I take no position as to the complete and exact nature of "reason". Clearly much that passes as reason is habit; "reasoning" is largely a matter of acquired mechanisms and emotional tendencies. But that there is nothing else, I do not say.

²¹ But it is conditioned by the nervous system and its acquired "mechanisms", and thus by material factors, which, together with common modifying experiences, allows us to think of a degree of uniformity in reason, and a sort of objective validity.

(6) *Social Environment*. Finally, there is the social environment which is to be considered as an element in shaping the individual's desire disposition, as has been indicated in what was said about participation valuations. A man's social relations partly determine what he desires, and incidentally, what he does not desire. Individuals find themselves involved in a system of generally-recognized (objective) values and of institutions, which are a part of their environment.²² Desires for approval, conformity, protection, assistance and comfort, and sex gratification, may be thought of as elementary social desires.}

2. Value as Adjustment; "Fitness" Value of Objects

Thus far, the subjective aspect of the valuation process has been emphasized, value being regarded as a response of "interest" on the part of a subject with reference to some object. It is illuminating, however, to look at valuations from another angle, and to consider them as related to the fitness of the object regarded as a means toward the ends determined by desire-tendencies and judgment. This approach raises the question, What is the meaning of the object for the subject? Herein lies the importance of the technological point of view.

It is not necessary, and is probably not correct, to think of objects as dictating to the subject. No materialistic implication is involved. But there are differences among objects, and these result in different stimuli and effects upon the subject—different reactions and tendencies toward the object, and different sensations. Some of the respects in which objects differ are of much importance in economics.

Some objects are scarce or difficult to acquire, while others are abundant or easy to acquire. This difference affects the reaction and desire intensity of the subject.

Some objects are near, and others are remote. The nearness or remoteness may exist in space or in time. In either case, the tend-

²² Perhaps the physical environment might also be mentioned in this connection to the extent that the individual's temperament, for example, may be influenced by it. Most of the social environment, however, has a different sort of relation to the individual, since he is, in a sense, part of it!

ency of the subject toward the object will differ, and the difference may be said to pertain to the object.

Some objects are external and others are internal. The responses of the subject must be different accordingly.

Some objects are phenomena perceived through the senses, while others are ideal, involving some such process as imagination. Some are tangible; others intangible.

Some objects are indivisible, at least without losing their character, while others are divisible. Some are complete in themselves, while others are complementary and have importance to the subject only when brought into relationship with other objects. Such differences lead to the distinction between fungibles and non-fungibles.

Finally, there is the great distinction between direct and indirect objects, the latter being instrumental and having importance primarily as a means of obtaining other objects which are desired directly.

Clearly the quantity, quality and nearness of various objects may, for all practical purposes, be taken as an independent variable establishing different degrees of fitness of objects with relation to the desire tendencies of any given subject. It is this aspect of valuation which economics has tended to emphasize in its treatment of "utility". The tendency has been to regard utility as "want-satisfying power" inherent in objects according to their elementary composition, form, time, or place, and varying in degree according to their abundance.

Thus the theory here presented involves an assumption of the reality of objects, both material and ideal, as well as the significance of characteristic differences among them.

It conceives of value as lying in a relation between subject and object, in such a way that we may distinguish in thought (1) the interest of the subject (depending on the nature of the subject and his characteristic desire disposition); and (2) the fitness of the object (depending upon the nature of the object and its characteristics of material, form, and position as a means of fulfilling a desire tendency). These are two aspects of the same phenomenon, observed from different angles. The synthesis is the motivation process which

results in activity, and is the basis for an observed *degree of importance* of the object to the subject.

3. Value as Importance—as “Phases of Life”; Relation between Subject and Object

Values are vitally related to life, or as Spencer puts it, are phases of life. They would be non-existent without consciousness (sensations and emotions), probably in a sense which would not apply even to such phenomena as light or color. They consist primarily of the significance attached to things as means of maintaining or enlarging life in any of its aspects.²³

We start with a subject and his character, regarded as a set of motives which condition his choices—want-and-desire disposition, and judgment.

All values involve some consciousness on the part of the subject. They may be merely *vague reactions and non-purposive tendencies*, or “wants”; they may be specific reactions, or “desires”, in which negative desires and dissatisfactions connected with efforts or sacrifices, are involved. Even in this primary case, however, the object must be recognized as a reality, and its fitness be perceived by the mature organism (thus enabling economists to speak of its “want-satisfying power”). Of course, such a recognition includes the relationship of the object to “me”, “I” being a particular mature organism with a characteristic desire disposition. Values in this sense are direct responses, as when I rest in the shade or look at a picture, and say to myself, “It feels good”, or “It is beautiful”.

When a “primary value” is a more *definite* and purposive reaction, which has been called *desire*, the nature of the object becomes more significant. As the subject learns the limitations of his environment (and activity is hampered by obstacles which tend to thwart the satisfaction of motives), negative desires, aversions, or costs, may also become a part of the valuation. Thus, in the first place, the subject's reaction is conditioned by a separation between the subject and the object, which condition is connected with the

²³ This is much the same as saying that they are the symbolic representations of motives.

common definition of desire as being the feeling of a lack of something. Such reactions are specific, and give us conscious degrees of difference in desire-intensity, which are the true basis for "diminishing utility" and "marginal utility". In the second place, a mixture of positive and negative desires—tendencies toward and away from the object—may exist, and the motivation may then involve a balancing of the two "forces". This results in a *worth*.²⁴

It should be noted that the primary values and worths, are not dependent upon enjoyment, pleasure, or gratification. The direct relation of such values is to want or desire. They depend upon degree of desire for an object—upon its *importance* to a subject in the sense of a tendency to activity. A common mistake of economists has been to confuse gratification with desire,—sensation with motive, or pleasure-feeling with lack-feeling,—as when they assume that pleasure is the cause of desire (hedonism). Probably this point is concerned in the discussion as to whether the *last* unit in a series, or the *next* unit added to a series, is the "marginal" unit. Those who would consider it to be the "last unit" probably think in terms of sensation, pleasure-feeling or gratification; while those who would consider the "next added unit", think in terms of desire and motivation. (The latter, however, may speak of "the utility to be derived from an additional unit".)

Finally, a still more complex level of valuation arises when choices are made. Judgment or reason functions in making comparison in such cases, and this leads to a choice and action. Certainly, wherever choices exist, values arise. Such values may be called secondary, as distinguished from primary or simple desire-intensity values ("worths" or "utilities"), and they represent the significance attached to anything as an essential in a process of choosing. They are relative-importance values.

(1) *The Levels of Valuation*. In connection with the idea of desire, it must be carefully noted that desires, if they are to function in connection with valuations, must not be compelling: value does not appear in connection with necessity, for necessity allows no such

²⁴ Clearly, "marginal utility" may be either marginal desire-intensity alone, or marginal "worth".

comparison and choice as are essential to value as an important phenomenon.

Regarding value as concerned with the multitude of relations between men and the objects around them, such as arise in real life, one may now classify its various phases as follows:

- I. MATERIAL VALUES
 - a. Sub-values
 - b. "Absolute values"
 - c. Relative values
- II. IDEAL VALUES
 - a. Voluntary
 - b. Coerced

Material values are values which concern objects regarded as realities, thus involving the duality of subject and object.

Sub-values are individual reactions towards those goods which are unimportant. This case includes the great class of "free goods", or objects which are so abundant that no importance is attached to them at any given time. Such goods, however, may have a sort of potential primary value. In the case of "free goods", no sustained or directed activity is stimulated. The distinction between subject and object is not felt; the subject is not conscious of any dependence upon the object; no problem of the relationship between ends and means exists. Again, in cases of satiety, which arise at least temporarily, the distinction between subject and object is lost for a time. In a general way, we may say that there is no effective stimulus, and that the object is lost in the subject, in the sense that its motivating power is lost when he is not conscious of any dependence upon it.

"*Absolute values*" are what may be called supra-values. This case is illustrated by the responses of individuals when they are confronted with great scarcity. Then, desire becomes a mere compelling force which so dominates the individual that the object may be a matter of indifference to him, in the sense that he has no choice. In the case of a starving man, of whom it may be said that he does not care what he eats, there is no question of the means. The means, as it were, become the ends. It may be said that the object is "in-

valuable". The general characteristic of the situation is that the subject becomes lost in the object which is his sole concern.

It is to such a situation that the term "need", as distinguished from a mere want, is correctly applied. Obviously, it is unfortunate that the extreme importance which becomes attached to objects of necessity should ever have been called value. In a very real sense, the phrase "absolute value" is a misnomer. It is in such general usage, however, that we cannot ignore its existence, and when enclosed by quotation marks it may be used.

The preceding cases of material values, (a) and (b), represent what are sometimes called the thresholds of value. In the first case, the object does not pass the threshold of consciousness into the field of valuation; it does not rise to the level of motivating action, or "importance". In the second case, the object has passed beyond an upper threshold, and becomes the source of the stimulus which touches off the sole motivation. It fills the whole consciousness of the subject, becoming of infinite importance to him. Thus it passes out of the field of valuation.

Relative values involve choice. In contrast with the "sub-values" and "supra-values"—non-valuable and invaluable things—we find a field in which the "importance" (motivating power) of objects to subjects is always relative, because comparison and choice are always involved. This is the field of value proper. It is characterized by a conscious separation between subject and object, such as can exist only when a subject chooses among objects. To take an example from the field of economics, we find men as consumers choosing among objects which they regard as direct means of gratifying desires, and attaching values to them on that basis. As producers, men choose among the indirect means of obtaining consumers' goods. The resulting values may be called relative-importance values. They differ from such reactions (wants) as may exist for free goods, in that there is a degree of desire intensity (importance) involved; they differ from the case of absolute necessity, since the "importance" is relative.

As Simmel has pointed out, with the development of civilization, culture, and refinement, there comes a reduced predominance of

organic wants or instincts, and at the same time, with the development of the powers of the subject, a large number of desires lose their compelling force. Habits and sentiments grow. Thus desires become scattered among numerous means of gratifying wants, as the environment becomes richer. Of course, choices are more numerous. Then a narrower circle of objects comes to be recognized as being "fit", which again involves more reflection and choice. Accompanying these developments, moreover, there are many cases of increased relative scarcity of "fit" objects; but substitutes are developed, again amplifying the field of choice. In short, with material and cultural progress, it seems that many desire-tendencies at least lose their absolute compelling force, and that therefore knowledge of relations between subject and object, and between means and ends, multiplies, and more values emerge as choices.

The development of society has great importance in this connection. There are purely individual or Crusoe values, but the content of life outside of society is limited. Consciousness is contracted, and choices are restricted, so that primary values are simple and secondary values are few. In society, men have numerous points of contact, and their experiences and desire dispositions are richer. Incidentally, this means that the environment has more meaning.

Ideal values are values in which objects are determined by the subject, thus in a sense eliminating the duality of subject and object.

Ideal values appear to be of a different order from the foregoing values, which have been somewhat loosely classed as "material values". The independent reality of objects does not exist in the case of "ideal values"; instead, the "object" derives from an ideal reconstruction made by the subject. Probably there is no process of comparison and choice involved, and at least such a process is not necessary to the existence of ideal values. Such values are highly subjective. It is notable that the distinction between means and ends is lost or inverted, and it is characteristic of those who are motivated by ideal values to say that "the end justifies the means". Such a statement implies that ideal values are not concerned with means except incidentally—that means are unimportant or lost in

the "end". It seems to follow that objects, apart from ends or goals, are a matter of indifference.

Thus it may be said that in the case of ideal values, the ideal becomes the compelling force. For example, the subject having set up some ideal of welfare, happiness, salvation, or what not, often proceeds to identify his ideal object with some real object, perhaps in the shape of some form of government or other institution. This procedure confuses the means with the end. It is apt to involve objects in abstract metaphysical values which may be called "natural" or in accord with a "law of nature" and which are considered as absolute. Accordingly, another case in which "extremes meet" becomes apparent; for it will be recalled that in the case of "absolute values" (supra-values) there was a case in which desire becomes the compelling force. In both cases, in their extreme or pure forms, there is no reflective choice, and consequently no value in the sense of relative importance.

These ideal values, as distinguished from the foregoing sub- and supra-values, may be called super-values, since they are of a different order from all so-called material values. They resemble the non-relative material values, to the extent that in both cases there is no contrast between subject and object, the object being the end, and there being no separate question of the means. After all, whether the end be lost in the means (absolute material values) or the means be lost in the end (ideal values), the result is similar.

Under the head of ideal values, we may distinguish two classes.

Voluntary ideal values arise in individual minds without coercion or compulsion from other individuals. Such ideals may be adopted consciously or they may be the result of processes of which the subject is not conscious. Thus habits and customs which may govern individuals' tendencies toward objects, are not infrequently ideals. Sentimental "personal worths" are probably to be mentioned here, and these include reactions toward such goods as family heirlooms, which no one else appreciates but the given individual or group. Certainly, so-called cultural values belong here. Ideals of morality and "the good", affect values in various ways. Religious symbols which arouse impulses and affect motivation, also belong.

Ideal values may result from *coercion*, and it is particularly important to observe this fact in periods when Collectivism is prevalent, with its resort to compulsion, including propaganda of all sorts.²⁵ Probably the phenomenon of government price-fixing is to be associated with coercive "ideal values", and this thought suggests that perhaps such so-called values are in reality outside the range of values proper, much as was the case with so-called absolute values. When a government fixes a price, it is presumably the result of some subjective valuation by the individual who acts for the government in the price-fixing, being in that sense an ideal value. Then the price is enforced, and individuals in the nation may be compelled to effect any exchanges of the given object at the fixed rate. Some may accept the ideal value as real, adjusting their own relative values accordingly. Others, however, will not accept the fixed price as representing the relative importance of objects. Either they will abstain from transactions in the given commodity or will turn bootlegger. Thus coercive ideal values, which turn into objective prices, lead to a divergence of real values from ideal values.

A point closely related to the foregoing classification, is the distinction between quantitative values and qualitative values. The latter, as will appear later, lie in choices among ends or goals, as distinguished from choices among objects regarded as means. Thus ethical and moral values, by restricting ends, limit the field of choice among means (e.g., wants for opium are ruled out, and various "nuisances" are taboo).

F. *Value and Price: Tertiary Value as the Criterion of Economic Science*

If there were no values but primary and secondary ones, such as economic marginal utility and subjective value, economics would be limited to a sort of psychology. The fact, however, is that eco-

²⁵ "Over-individual values" as analyzed on a preceding page (pages 173ff.), may represent the compulsion of some ideal or set of ideals set up by a government and forced upon citizens. Such over-individual values, however, may be voluntarily accepted by individuals who willingly adopt the *ends* which are suggested by the state. Possibly, too, if individuals choose reflectively among proposed ends and consciously adopt one, we may say that there is a relative value established which may be thought of as having some objective validity.

economic value goes beyond the limits of psychology and emerges into objectivity to a degree which permits quantitative measurement of cause-effect relations in terms of prices paid. The preceding discussion of subjective value provides the basis for understanding the genesis of objective values, which may be classed as tertiary, to distinguish them from primary or secondary values. Such value is the criterion of economic science.

Indeed, as indicated on pages 166-167, "tertiary" objective value is of a different order from subjective value. It may be defined as the relative importance of two or more objects to two or more subjects. It is the generally-recognized value that arises when overt acts of exchange, production, or use enable two or more persons to compare their subjective values, thus making them objective. Of all objective values, those which are determined by processes of exchange are most definite and highly objective.

Accordingly, objective value, as the criterion of economic science, limits the scope of those relations between subject and object which can be included in the science. Probably only the "material values" which are relative can be dealt with scientifically, or be subject to law. Most thinkers have agreed that the "sub-values" and "absolute values" must be excluded; probably even the voluntary ideal values must also be left out, except as they find expression in material values which they may affect, and thus become objectified.

All the foregoing analysis suggests the reason why it may be expedient strictly to confine the concept of economic value to the level of valuation which has been described as "value proper", and to eliminate from economics the sub- and supra- and super-values, as being non-quantitative and not subject to measurement. Objects which are not separable from subjects, and therefore not susceptible of choice or quantitative appraisal as means to end, may be stimuli of a sort. They may have value of a sort. Such value, however, is not available for scientific treatment.

This is not the place, however, to treat the further development of objective value. That will be required in subsequent chapters on the determination of economic value. Here it is necessary to make but two observations. First, that although objective value is the

heart of economics, such value would not exist if it were not for the existence of subjective values. It can not be explained except in terms of subjective value; nor can any but uncertain and changing empirical laws be formulated unless based upon the fundamental causal conditions and forces which work through the primary and secondary values.²⁶

Second, tertiary or objective value is the truest "social value", and has the highest sort of "importance for life", according to the concept developed in the preceding section. It is social value in a deeper sense than merely being a value which could not exist if there were only a single individual. It is social in the sense that it can exist only when there is that voluntary exchange among individuals which results in cooperation. Thus it expresses, or may express, in measurable form, an equilibrium between all the positive and negative desires of a group of individuals²⁷ with reference to certain transferable goods.

This point will be made clearer in the two following chapters.

²⁶ For example, economists are learning in the 1930's some things about the working of the empirical "Gresham's Law" (concerning the "driving out" of good money by bad) and "inflation" which might have been known long ago had that law been based more largely upon analysis of individual motivation and subjective valuations.

²⁷ Subject to competitive conditions. The individuals must be producers (or acquirers of a non-destructive sort) if the equilibrium is to be maintained.

Chapter IV

ECONOMIC VALUE; NATURE, CAUSE, AND FINAL DEFINITION ¹

A. *The Different Kinds of Value*

Although too seldom realized, it is of great importance to see economic value as one of several orders of value. This helps one to understand the nature of economics and its relation to other social sciences. It also has an important bearing on social policies.

One may think of a world of values in which there are at least five chief orders or levels, and which together comprise all aspects of life. These most important value levels may be listed as economic, aesthetic, ethical, political, and religious. The meaning of any such list comes out most clearly when the several values are grouped into classes so as to bring out differences and interrelationships; and such a classification is attempted next.

1. Values as Related to Survival

First, values may be classified on the basis of their *relationship to the survival of man*. Such a classification is as follows:

(1) *Adjustment values*, which involve survival, and therefore activity. Adjustment values, so-called, center in problems of adjustment between (a) subject and object, and between (b) individual and other individuals (Society)—the two great dualities. They always relate to the means toward some end (although the problem may primarily concern the end), and involve judgment and choice. They include:

Economic value, which concerns man's adjustment to the limitations of space and time, and involves the concepts of utility and disutility.

¹ See the works of Urban, Pettit, Laird, and Fraser, cited above on p. 161, and L. Robbins, *Nature and Significance of Economic Science*, Anderson, B. M., *Social Value*, etc.

Ethical value, which involves man's adjustment to other men, and either assumes some innate "moral sense," or makes survival the test of what is "right". Such value finds expression in judgments as to what is "good" or "bad".

Political value, which concerns a society in its relation to other societies or to its component individuals, and the problem of order as against disorder among men.

Legal value might also be distinguished, though it would have some relation to political value, since it concerns order among men. It is, however, more a matter of arbitrary rules of conduct, and pertains to the state rather than to society.

(2) *Harmony values* stand on a different level from the foregoing survival values. They do not involve survival, but are matters of passive contemplation of objects, material or ideal, regarded as *ends*. The chief forms are:

Aesthetic value, which concerns the means of certain pleasurable sensations received by individuals through eye or ear,² and involves such concepts as beauty and harmony.

Religious value, which concerns harmony between the individual and the universe—mankind (or even "the world") and eternity with relation to mankind.

Closely related to religious value (and also to ethical value) is the concept of "moral" value, in that both involve some over-individual sanction. Moral value, however, differs from religious value in that it does not rely upon super-human sanction.

2. Values as Related to Individual Appreciation

Another classification, which perhaps has more direct bearing on the nature of economics, is that which depends upon the *individual's desire-intensity toward an object regarded as a means*. According to such a classification, we may distinguish:

(1) Values based on a *direct individual reaction* to an object—such values as are indicated when one can say, "This object has value to me." In this case, the value may exist apart from any au-

² Some psychologists do not agree to this limitation, and economics need not care what the final verdict may be. Meanwhile, the author *feels* that "standards" of value are more possible for the sensations indicated than for those of touch, taste, etc.

thority or over-individual sanction. Such are *economic value*, which concerns objects considered in relation to *any* desire tendency, or the means of gratifying *any* desire; and *aesthetic value*, which, as already noted, concerns means of certain pleasurable sensations.

(2) *Inter-individual values*,—values not based on direct individual reactions to objects. The essence of such values lies in the relation among individuals. They may include valuations of human action. They include “over-individual values”, “participation values”, and ideals. Such are *ethical value*, *politico-legal value*, and *religious-moral value*.

It will be noted at once that economic value stands out as being the only one among these several classes of value which is both an adjustment or survival value and a value based on direct individual reaction to some object regarded as a means. In short, it is the only type of value of which it can be said that it is determined by individual choices among objects without regard to ends, or by individual judgments concerning means to ends.

3. Values as Related to Possibility of Objectifying Them

One other possible basis of classification is suggested by the foregoing statement. Values of all sorts might be classified according to *the possibility of objectifying them*. On this basis, economic value would differ from all the others, by reason of the fact that such value readily becomes objective in the shape of “market values”—values which are generally recognized as important realities by the various individuals in the group. Some of the reasons for this will be explained in the chapter on the determination of economic value. Here we merely note that one important condition which facilitates objectivity is the fact that economic relations are less personal than most others. The individual is, or can be, less self-conscious in his buying and selling than in his ethical or political relations. Another is the fact that there is a clearer separation between demand and supply “forces” than seems possible on the other value levels. The subjective prices of potential buyers and sellers are, or can be, determined with an important degree of separateness, by conditions which affect the individuals before they exchange their goods. In economic life, the basic relation is between the in-

dividual man and objects outside himself. Personalities do at times enter, and bids and offers are not infrequently changed in the process of bargaining. Nevertheless, economic values will be found to depend to a decisive extent upon the equilibration of impersonal and independent motives or tendencies ("forces") which make the concept of an objective equilibrium applicable *to an important degree*.

Other values can, in a sense, be made objective, but not in such a definite and quantitative way. They generally involve personal relations. They are apt to require education to an appreciation of standards. In some cases, a sort of objectivity may even be forced by coercion. But, in no case, are they determined through a process of exchange.

4. Relation between Economic and the Other So-called "Social Values" ³

These different values are both separate or distinct, and also interrelated. Some thinkers who emphasize the interrelation have proposed the difficult course of attempting a synthesis of all values, which would give us a social philosophy, or a "sociology". This would give economics, if recognized as a distinct science at all, the place of a mere compartment in sociology, and subordinate thereto. Even before the day of the sociologists and the socio-ethical economists, we had utilitarianism, and this tended in a similar direction; at least, this is true of hedonistic utilitarianism. The idea is that men desire happiness; happiness means the good life, and at the same time is identified with "utility"; therefore, economics and ethics are one. In fact, Benthamism was in reality a system of utilitarian ethics, and this becomes apparent in its influence on the economist, John Stuart Mill.

(1) *Economic and Ethical Values*.⁴ It is particularly important to consider the relation between economic values and ethical values,

³ Cf. R. B. Perry, *General Theory of Value*.

⁴ See R. B. Perry, "Economic Value and Moral Value", *Q.J.E.*, May 1916; A. F. McGoun, "Higher and Lower Desires", *Q.J.E.*, Feb. 1923; F. H. Knight, "Ethics and the Economic Interpretation", *Q.J.E.*, May 1922; "Relation between Economics and Ethics", *Amer. Econ. Assn. Supplement*, March 1922; J. A. Hobson, *Economics and Ethics* (1929).

since in practice these two have been most frequently mixed. One may say that economic value rests upon any sort of desire, regardless of its rightness or wrongness. *Generically, economic value is a mere question of any means to any end, as determined by individual desire and choice.* It involves a direct relation between an individual subject and a particular object, and the social survival aspect develops through the survival of the individual, economic valuations being in that sense automatic or non-coercive. Economic value, moreover, can serve as the basis for objective exchange values and market prices.

But ethics would *classify desires* (and probably wants), distinguishing between those which are "right" and those which are "wrong". The desires would still exist in the mind of the individual, and have possible economic consequences, but from the ethical standpoint, some of them would be a matter of indifference, and others would be repressed or inhibited as being "wrong". Thus ethics is a matter of ends, and its values are qualitative.⁵ There can be values or prices which are fixed on the basis of ethical appraisal. Plenty of illustrations may be found in the "just prices" of the Middle Ages and the "fair values" of today. Any system of ethical prices, however, can exist only by means of coercion in the broad sense of that term, since it cannot arise automatically out of the valuations of existing individuals. The test of an ethical value lies in the end or goal which is sought—the effect upon other individuals—the good life. This might mean that there would be some ideal absolute standard representing some one's "moral sense" of what "ought" to be, or what the individual's "duty" is. Or it might mean the acceptance of a survival test which would find expression in customs, taboos, and the like, or in the mere acceptance of the ability to survive with little or no regard to the means used. Such ability to survive would doubtless take into consideration all factors pertaining to life, including economic, political, and biological aspects, and would necessarily tend toward the conclusion that whatever is, is in the long run "right"—is ethically valuable.

Practically, ethics, as it affects individual *choices*, tends to become

⁵ See above, page 191.

negative, finding expression in inhibitions or negations of individual tendencies. Thus ethical valuations generally lead to prohibitions against doing that which injures or destroys either (1) the self or (2) other selves, the extremes being the conclusions that suicide and murder are bad. Or ethics may amount to saying, Do not do what some *authority* says will make you unhappy. The significance of this idea, including its relation to economics, depends upon the definition of happiness.

Of course, it may be said that ethics has its positive side, since it says, Do your duty, Give charity, Love your neighbor, etc.; but such rules are generally found to involve in practice *not* doing things which the individual wants or tends to do. Most men find "Doing unto others" means not doing the things they are inclined to do.

Here one may ask if a "fair value" or a "just price" is not really an economic value, and an objective one. In reality, however, fair values are "*valuations*", as opposed to objective values. They represent the ideals of some authority, and are expressed in prices "fixed" by that authority. Such valuations, moreover, will usually be found to rest upon a mixture of economic, ethical, and political bases of valuation. If the "fair value", however, is fixed on the basis of a consideration of personal relations among individuals, it is to that extent ethical. If it is based on the concept of order and security, it is legal. If it is based on the idea of protecting some nation as against other nations, it is political. If it concerns the ultimate good of the race, it is probably essentially religious. Such non-economic values may be considered in fixing "fair values", and they may even predominate in the process.

All this may be illustrated by the problem of valuing the work of the Tennessee Valley Authority in developing the water resources of the Tennessee River and others. At first, the primary end appears to have been the production of nitrates for war munitions—a basis for political value. Later, the economic value of the work as a source of power and a means of navigation, gained importance. The problem of using taxes levied on New Yorkers, to furnish cheap light and power to Tennesseans, is partly ethical; so is the problem

of allocating expenses among the power, navigation, and flood-prevention aspects of the work.⁶ The effect of the work in beautifying the region is a matter of aesthetic appraisal.

Some economists of the Institutional or Welfare type, who favor a large participation by the state in industry, argue that government regulations of rates and service is solely or predominantly a matter of economic value. They reason that where competition does not work, as in the railway field, the government merely replaces competition. It *merely* undertakes, they say, to provide "adequate" service, at a "price" or rate which will be high enough to attract investment capital and enable the business to compete with others for labor and materials. At the same time, the price has to be fixed low enough to attract customers. Both producers and consumers have to be satisfied. It is suggested that the prices so fixed may be called "reasonable" rather than "fair" (ethical).

But ethics is not unreasonable, or a mere matter of the heart; and a value that is "reasonable" is not necessarily any freer from subjective valuations, than is one which is ethical. For example, what is "adequate" service, and who is to be the judge? And can the price or rate be regarded as separated from the numerous other prices or rates for services which are jointly rendered, thus requiring "allocations" of expense which are essentially ethical?

The crucial question in determining fair value or just price is, Which of the several levels of valuation is to be decisive? Such cases always involve authority—the authority of the church or the state, for example. Economic value, however, lacks both the element of authority and the reference to "ends" (such as "adequacy" of service), which are necessarily involved in the determination of a "fair" value.⁷ *An economic value remains as a distinct kind of value which, in any case, is to be dealt with as a separate element in the valuation process.* In the direct process of fixing "fair value", there-

⁶ E.g., this involves possible injustice to investors in private utilities, since the government's price per kilowatt hour may be cut by charging an "unduly" small part of joint costs to its electric power department.

⁷ I agree with Laird when he says: "A science which is restricted to utilities (or *means*) is in a sense a dependent science. For (by common consent) ends govern means, and consummations govern the steps which lead up to them." (*Idea of Value*, p. 6)

fore, the correct or expedient procedure would seem to be to keep the several value levels distinct, and to consider the problem separately from the point of view of each. What is the political value? What is the ethical value? What is the economic value? Which of these values seems to have the most importance (value!) at the given time? Above all, who or what authority should decide this, and thus make the supreme valuation? No "scientific" answer to the last two questions seems to be possible, and this no doubt is the reason for dictatorships of one sort or another.

Perhaps, however, it is worth while to raise these questions in order to make the issue definite, and to suggest the basis for a rational appraisal. Thus, if the ethical aspect of a given problem is a matter of relative indifference, one may say that economics may decide the answer. Indeed, the economic valuation may in such cases determine what is ethical—what is right. Again, if no basis for determination of economic value is present, one may say that it becomes *necessary* to call in ethical bases of appraisal. This is often the case where monopoly is involved, and still more frequently in cases of "joint costs". Here individuals have no choice, or no sufficiently definite basis of choice, and prices cannot be explained or defended from a purely economic standpoint. The question becomes, What *ought* the traffic to bear? One has to examine only a few cases involving valuation or rate "fixing" for public utilities to become aware that here ethics largely replaces economics in fixing prices which are usually thought of as having primarily economic significance.

On the other hand, there is the case of government price-fixing for cotton. Some one says the price "ought" to be 12 cents a pound. How does he know that? If pressed for an answer, he may say that farmers "ought" to get more money, or he may say that farmers "ought" to cover their cost of production. Or again, he may say that the government "ought" to support all its citizens. But in each case, the reason for the "ought", in the last analysis, goes back to some basis of intuition which is certainly not a matter of economics, and which is essentially arbitrary. Thus it would seem that in such a case as cotton production, in which the question is one of an

adjustment between man and his limited natural environment that is made on the basis of the relation between desires and costs, economic value is fundamental. In such a case, at least, the economist's decision represents the adjustment which is required for survival, and the problem involved is essentially a survival problem. Economic principles should control.⁸

It might be supposed that if "prices" be accepted as found around us, and adopted as the data of economics, we thereby avoid ethics. But even if we suppose that no price-fixing exists, we find that, when considered as economic phenomena, the scientific significance of "prices" depends upon their relation to economic values. A large part of any meaning they have must lie in their relation to economic values. Thus we are brought back to the point that economic values cannot be the data of a social science unless they can be explained, so that under given conditions the value of a good can be predicted. When, however, no equilibrium of forces exists or tends to exist, control by the group must be introduced (for example, by means of interest rate manipulation), and such control brings ethics in. Certainly "managed" prices and "managed currency" involve ethical (and political) judgments as to what to do.

(2) *Welfare and "the Good Life"*. The old question raised by the formula, "the greatest good of the greatest number" is always new. What is "good"? Sometimes other words are substituted for "good", such as happiness, benefit, and utility; but these merely serve to shift the emphasis about among ethical, aesthetic, and economic valuation levels. Then, too, there is always the other question, namely, what does the "greatest number" mean? Does it involve the questions, Are all people the same? Who are the best people? The last question becomes acute when some authority undertakes to fix a price which others must pay; for then one must ask, Who is he, that he knows how to do this in such a way that the greatest good will result? Even if political processes result in the selection of the "best" person to exercise such authority, what basis is there for

⁸ Ethics and politics would then come in as a matter of "relief" for farmers who fail, etc.

believing that he would know what the economic value is, or what is best for others?

All such considerations head up in the question, What is the basis for qualitative values, or how are we to determine ends or goals? "Welfare" and "the good life" are exceedingly complex and difficult concepts! Some economists who have ventured to launch what they call economics into such uncharted seas, have adopted one compass, some another. If we begin with Aristotle, we find the basis for the good life laid in the idea of self-sufficiency, the essential being that the individual should have "just enough", and should limit his wants to his means. Strangely enough, although it will be noted that in the last analysis this makes the means the determining factor, the problem is thought of as lying solely in the ends—the "use value" of the shoe rather than exchange value. Similarly, in more recent talk of "social value" and "production for service" or "use". Some later thinkers, such as J. A. Hobson, have resorted to psychological tests, and seem to rely on the emphasis of "human costs" as opposed to "pecuniary costs". They allow for different sensibilities and capacities among different individuals, and for instincts. The socio-organic thinkers, such as C. H. Cooley, would solve the problem by considering the social group as a unit, virtually ignoring the individual, and setting up a "social value" as an over-individual basis for determining ends. Thorstein Veblen appears to have adopted the so-called technological test of "efficiency", with an "instinct of workmanship" as his basis. And this basis has led to the proposal to take the mere physical quantity of some object—say, kilowatt hours—as a standard of value! This takes us back to Smith and Ricardo, with their labor-time theory, thus showing how extremes meet.

In short, those who seek to make value qualitative and a matter of ends, are usually found to take some quantity of a means as their standard.

All along through economic thought, too, we find a tendency to fall back on the doctrine of equality, and some form of Communism, as furnishing the solution for the problem here considered. This

solution, if it can be called such, virtually consists in ignoring the problem of value.

As opposed to all these concepts of welfare and the good life, we have the two tendencies found in English Classicism: (a) the positing of a "moral sense", innate in man, upon which we must rely for the final decision, and (b) the utilitarian hypothesis of the greatest good for the greatest number, concerning which some observations have already been made. (The latter breaks down either into an individualistic hedonism, which makes "the good" consist of a pleasure desired by an individual, or into a more or less materialistic test of survival.) At least, this approach recognizes that we cannot attain ends without means, and that the problem of evaluating means may be considered separately and with due regard for costs. It has served as a corrective to "wish thinking"—and wish values.

The purpose here is not to seek the answer to the fundamental problem involved. Frankly, the author has not much idea as to what the answer may be—if there be an answer. The purpose is, first, to bring out the fact that no satisfactory answer has been given by those who have undertaken to mix economics with ethics and politics; and, second, to point out that in some way *there must be separate and distinct appraisals which correspond to the different levels of valuation* already distinguished. Let each problem of value, as it arises, be considered separately according to its economic, ethical, political, aesthetic, and moral-religious aspects. If what is "economic" is also "right" and "beautiful" and "good", the problem is not so difficult. In any event, no authority, human or divine, can decide what is the "greatest good" without first making a choice on each of the distinct value levels. Even if we assume that an "end" has been determined by some authority, we must still inquire, What is the basis for the qualitative value—the end? And what about the *means*, and the appraisal of the means as related to the given end!

5. Economic and Political Values

As in the case of economic and ethical values, political value is a sort of survival value. It is related to *social* survival, however, and

concerns order within, and the protection of, an organized group of individuals, a state. Here again we find a relationship among the different value levels, economic value being related to political value to the extent that the latter involves individual desires for objects which are regarded as a means of gratifying such desires. Thus, while many individuals desired the construction of the Union Pacific Railway for economic reasons, the predominant purpose of the government in giving the aid which made the construction possible in 1864-69, was political—the desire to bind the Pacific Coast area to the nation.

Political issues often center on problems of economic value, as notably in such cases as monetary policies and tariffs. In short, what is economic then becomes or may become politic. It is to be noted, however, that always the two kinds of value are separable. It may be that the political policy is based upon and derived from an economic policy, the political aim being really determined by economic valuations of means. Or it may be that political valuations react upon economic valuations, as in cases in which political action affects the desire dispositions of individuals, and we talk of "group psychology". Through legislative enactments, conditions may be fixed to which the individual must make adjustments in his economic life—for example, railway rate regulation or limitations upon hours of labor in certain industries. In these cases, what is political becomes economic—though not necessarily economical.

In the period which began with the World War, political values became predominant over economic values, one result being economic uncertainty, waste, and restricted trade, all tending to lower the average standard of living by reducing the means available for gratifying individual desires.

6. Can Different "Social Values" Be Fused?

Before it could be possible to fuse the several levels of value—as economic, ethical, and political values—it would be necessary to realize at least the following three conditions:

(1) *The several valuations would have to be reduced to the level of individual appreciation, so that all may find a common denomi-*

nator in individual desires. This would require that over-individual values, when involved, become a real part of the individual's valuation process,—not on Sunday only, or when the policeman is near. Unless ideas can be “sold” to people, individuals differ widely, values fall apart, and prohibition, price-fixing, and the like, fail.

(2) The several valuations would have to be reduced to some sort of quantitative terms, so that when choices are available the means to ends may be agreed upon. In other words, we must be able to reason about and explain the relations among the several values. This requirement, however, may be met by a process of “rationalization”; for, in practice, the solution is often found by substituting the means themselves for the ends. For example, men may start with “free silver” or “trust-busting” as means to the end of a more abundant life, and then by a process of transference and imputation they may make “free silver” or “trust-busting” the political *ends*—the “objectives” of some political party.

The chief meaning of this requirement probably lies in the necessity of objectivity. When *economic* values are objective (market values); when an *ethical* issue is definite, and feeling is so strong that the “right” may be determined definitely, and lead to general agreement; and when the *political* issue (involving order, security, or power in a social group such as a nation) is definite, and the vote (or other political decision) is overwhelming, so that the decision is practically unquestioned,—then we can consider three objective valuations. Perhaps we can do so objectively!

(3) Qualitative differences among individual desires would have to be eliminated, or in other words, uniformity of ends, as seen by individuals, must be attained. In short, individuals would have to agree as to what constitutes wealth, the good life, social justice, etc.⁹

In addition, it may be doubted that any account could be taken of differences in costs: for these are too purely economic and individual to be considered. Political and ethical values are especially difficult to explain except in terms of individual equality, or one

⁹ Insofar as survival values are concerned, this condition may exist in cases of absolute need, when the existence of any and all values is in question, and in case of completely relative or interdependent values, such as exists when what is good or politic depends upon what is economically valuable, and *vice versa*.

vote to one individual; but economic values include "production values", and these are *net*, involving differences both in individual capacities and in individual costs. Thus we find that, when political values predominate, as in the nationalistic systems of the 1930's, there is often a tendency to ignore costs and economic values.

By establishing such conditions—if that were possible—the several values could be made objective, and be subject to quantitative measurement.

To put the matter in reverse, it may be said that as long as individuals in the political body differ in their attitudes toward objects regarded as means of gratifying their desires, and as long as politics is not a science, economics must be separate, and economic values must remain on a different level from political values. With special reference to politics, this means that economics must remain separate at least until we are able to determine objectively who has the best mind for leadership, and to find the way to insure that such individuals will have *effective* leadership.

If these things could be determined, there would then be the basis for a collective plan which might be regarded as tending to become the plan of the individual members of the political group,—at least, individual plans would fall into the collective plan. This is the ideal of Communism, and true Communists tend to adopt strong means of eliminating the differences among individuals, partly in order to merge economic value in political value, even going so far as to have "purges".

Of course, if there be no question as to the means (economic technique), qualitative values, involving a choice among ends, may more easily predominate. For example, we can accept the slogan, "a more equal distribution of wealth", *if the means which are adopted to attain that end, are known to be effective and not to have counteracting results*. If, however, various schemes of taxation, or money and banking, or pensions and doles, or government control over industry, are the means, there may be question as to whether they will work. If they work, they may have effects which react upon the very concepts of "wealth" and "equality." They may reduce the total amount of wealth to be distributed. Under such

conditions, therefore, we are driven to give primary attention to the means, and that requires economic appraisal. The difficulty of confusing ends with means soon becomes apparent!

So-called "social values" are ideal valuations in which the "end" is the primary consideration. The individual, as such, can appreciate only the end, say "general welfare". True, he might consider the "general welfare" as a sort of means to his own welfare; but, unless a substantial uniformity of interest among individuals be assumed, the individual subject would become lost in "society" or "the state", and there would be no separation of subject and object. Just as value is a function of the relation between subject (interest) and object (fitness), so, in society, it involves a relation between the individual (subjective value) and other individuals or "society" (objective value). Accordingly, "society" must be regarded as outside of the individual—as an object—a means.

In ending this discussion of the relation between economic value and other "social values", final emphasis is given to the possibility of modifying or limiting the economic means, without attempting to change essentially the ends. Just as we regulate football playing without changing the rough and vigorous struggle among the players or the enjoyment of the spectators, so we may do with business. We can regulate competition to a great extent, without depriving it of its essential quality or effectiveness as a democratic process of determining objective exchange value. The long history of the rising plane of competition, and the growing lists of objectively recognized "unfair methods", are in point. This gives ethical or political values a place, without the necessity of any dictation as to the essential ends. Instead of ruling that individuals must not play football, or that no one shall attend football games, we gradually adopt rules which eliminate the generally recognized destructive practices. So it may be with competition as a means of effectuating economic value.

B. *Means vs. Ends*

Clearly the foregoing discussion largely concerns the relation between means and ends. Economic value is concerned primarily with

means; ethical and political values are concerned primarily with ends—at least, from the standpoint of the individual.

1. Production or Consumption the End?

This aspect of values arises in another question, which apparently pertains solely to economic value, namely, the questions whether production is an end, and whether consumption should be regarded as the sole end.¹⁰ At first glance, it seems obvious that an individual may, perhaps for the sake of exercise, regard productive activity as an end. And by the same token, he may regard an act of consumption as a means for building up his bodily or mental capacity. The matter, however, is not so simple as one might infer from these abstract questions.

The question depends upon the definition of "production". As a matter of fact, not any and all activity is productive activity. Merely to make a plow or to raise some wheat is not necessarily production. True, the activity or the "products" may have some kind of value, aesthetic or ethical, but it does not follow that they gratify desires or involve choices. Insofar as economics is concerned, production is activity *for the sake of* consumption, and is directed toward making plows and raising wheat as a means of fulfilling a desire tendency or gratifying a desire, whether directly or through exchange.

Economics must consider consumption as an end, regarding consumption as fulfilling desire, and desire as modified by the limitations of objects, involving costs or the overcoming of aversions. It must regard production as dealing with adjustments in environment as the means to such ends. This is the only procedure which allows us to make economic valuations, by bringing consumption and production into balance. Otherwise, men would do things or make things merely as the expression of some "instinct of workmanship" or as an outlet for pent-up energies, without relation to the worth of the "product"—without relation to its utility, cost, or demand. In other words, there would be a jumble of ends and

¹⁰ See, e.g., Knight & Smith, *Economics*, Vol. II, p. 945. Cf. Marshall, *Principles of Economics*, Bk. III, Chap. II.

means which would obscure any problem of economic values. Survival values would be neglected.

To some extent this condition exists in fact, and there comes to market a relatively small quantity of goods which is not produced according to economic motivation. To this extent, we find another respect in which the field available for economic science is limited.

To this extent, too, there has been ground for confusion in economic thought, and this appears in the tendency of Marshall and some of his followers to slip into "welfare economics" by introducing "activities", unrelated to demand, as a motivating factor.¹¹ There is, however, no reason why we cannot treat such non-economically motivated activities as a constant, and a constant that is unimportant "at any given time". Moreover, no reason is apparent why desires for "activity" may not be adjusted to desires for goods (products) in the long run. After all, a desire to "act", is a desire to "do something". Why should we not assume that, aside from mere recreation, men tend to favor those activities which result in the most distinguished commodity or service, whether in quantity or in quality?

It should be remembered that we do not hold that desire or consumption is *the* end—neither economics nor any other science tries to know the ultimate goal of life. We merely accept desires as ends in a limited and immediate sense; and for the particular purpose of the science (and to the extent that they can be known) economics accepts desires as they are. And it assumes that usually the gratification of desires is consumption, which will be true as long as men's wants for goods are not sated, and most of us have to work for a living.

2. Individual or Society the End?

The problem also concerns the relation between individuals in society, and arises out of the differences which exist among individual subjects. If all of us had the same wants and desires, it seems that we would all be one as to "ends", and there would be no problem in this respect. We would all have the same ideals, and

¹¹ Marshall, *Principles of Economics*, Bk. III, Chap. II.

therefore our ideals would have an objective validity which is lacking in fact on account of the differences which exist. All forms of societism would regiment individuals, in order to induce this condition of substantial uniformity. Thus by getting rid of differences, the "leaders" would allow their own ideals to predominate. Similarly, Communism would undertake to provide equal means. Fortunately, or unfortunately, the physical environment is not subject to "education", and its limitations, together with the fixed differences which characterize different locations on the earth's surface, constitute one of the great barriers to all attempts to eliminate the problem of economic value by establishing equality in the sense of uniformity.

Idealism deals with ends, not with means. Idealists tend to confuse wants—good wants (1)—with the means of gratifying them; or to regard wants as a sort of means, turning wishes into horses, as the old saying goes. Materialism, on the other hand, always centers on the material as a means, not the ends, and so regards wants as ends which are limited by physical conditions. Both represent extremes, since clearly, not all wants can be ends, and if every individual were to gratify every want which flits through his mind, he probably would not long continue to exist. The very test of survival suggests that one cannot take any and all wants as ends, but that such ends must be subject to appraisal and limitation. Obviously, man cannot live by automobiles alone.

3. Science Deals with Means

It seems clear that in any ordinary or expedient sense of the term, science cannot deal with ends or goals. It must deal with "causes", and with objects which can be measured in terms of quantity; in short, with means to ends.

Perhaps there is no better way to illustrate this idea than to point out the extremes to which two divergent tendencies in economic thought have led. On the one hand, we have the socio-ethical or welfare type of economics, so-called. Insofar as this economics deals with value at all, it is concerned with qualitative values, or ends. It regards economics as dealing with means to "social welfare"

for the "common good", thus making it a matter of art or policy which knows no scientific laws. On the other hand, the mathematical economics, so-called, eliminates all value except in the sense of a mechanical ratio among objects or prices, and it does so on the ground that a consideration of the causation of value, as pertaining to the importance of an object to a subject, would unnecessarily plunge us into an unsatisfactory if not hopeless attempt to deal with conditions which cannot be measured. Thus welfare economics confuses the means with the end, while mathematical economics refuses to consider the correlation between means and ends in terms of cause and effect.

Incidentally, the latter regards life as "static", while the welfare economics takes a highly "dynamic" (qualitative) point of view. In both cases, we find no basis for a science in the ordinary and expedient sense, in that there is no undertaking of causal explanation and no laws governing cause-and-effect-relationships—no prediction.

4. Quantitative vs. Qualitative Values ¹²

All values involve choices. These choices may be among ends or among means, the former being essentially qualitative and the latter essentially quantitative.

If the question be one of qualitative values concerning such ends as "collective needs" or "common welfare", and if these ends be known, fixed, and attainable, there seems to be little question as to means or as to quantitative value. The end may justify the means. Similarly, if the ends be regarded as highly dynamic and changing rapidly, the same conclusion applies. But three questions arise which cause difficulty in making such assumptions concerning ends: (1) What ends are actually known? What basis is there for choosing among ends or goals of life? What are our ethical or political aims? One answer may be that the end is survival. But survival of what? Indeed, what is survival? Is any choice involved? Or one may reply that ends are determined by intuitions of leaders.

¹² Cf. L. Robbins, *An Essay on the Nature and Significance of Economic Science*, Ch. II; Knight & Smith, *Economics*, Vol. II, p. 91f.

But in that event, there is again no choice—for most of us; it is a matter of authority.

(2) The second question is, What happens if the ends are limited by the means? What if we find that we cannot do some of the things we planned? As a matter of fact, it usually is found that it is important to understand and appraise numerous objects regarded as means to our ends. Or to put it another way, we find that ethical and political values are influenced by economy.

(3) Finally, the question arises, Is it not true that "ends" generally change but gradually, so that there is a considerable degree of continuity? If so, it becomes possible and worth while to study and appraise the means available under the conditions which prevail "at any given time". This is the basis for the conclusion that economics exists as a science having laws which are of importance. (It may even be possible to ascertain some fixed principles of gradually changing means to gradually changing ends, thus allowing the existence of evolutionary scientific laws.)

C. Economic Values Classified; Preliminary Definition

Sufficient analysis has now been presented to enable a fair understanding of the several classes of value, and some of their more important interrelations. The basis for treating economic value as logically separable and distinct from other values has been laid. In this connection, it is to be hoped that some light has been thrown on the nature of so-called "social value", showing it often to be a mixture of ethical, political, and economic values. Incidentally, the significance of "means" and "ends" with relation to value, has appeared. These matters being clear, one may now pass to a discussion of the different orders of economic value, and their several phases.

First, it may be well to recall the various degrees of value, primary, secondary, and tertiary, as set forth in the preceding chapter. It is perhaps unfortunate that the word, value, has been used in the sense of so-called "primary value". Certainly this is not the accepted economic usage. It is, however, in use among some philosophers and psychologists, and it serves both to emphasize and to clarify the part played by wants, desires, and choices in the

genesis of value. It should be useful to the economist in facilitating a better understanding of the relation of economic value to other values.

If the existence of economic value be assumed, however, "primary" valuations may be ignored, and attention may be focused upon the more practical aspect of the function of value in expressing motivation. From this standpoint, the purely economic values, secondary and tertiary, may now be classified as follows:

1. Subjective Value

Subjective value is individual, and represents the relative importance attached to a "good" by a person. Such values may be direct or indirect.

(1) *Direct Subjective Value.* Subjective *use* value depends upon a recognition by the subject that his well-being in consumption depends upon the given object. The object is regarded as a direct means of gratifying desire. Thus, when I say that "I value eggs more highly than beans, because they always agree with me", I am saying that this article of food has a higher subjective use value than the other.

(2) *Indirect Subjective Value.* Subjective *production* value implies that the object is regarded as a source of net income to the subject, who is motivated by its stimulus, and accordingly values it as an indirect means of gratifying desires, as when a gardener says, "I value this hoe more than that." It is in this case that "costs" become involved, since I can hardly consider income without also considering outgo, and net income.

Subjective *exchange* value, another form of indirect subjective value, arises when a subject considers an object as a *means of securing another object from some other subject through exchange*. He then attaches an importance (relative) to the given object on account of the possibility of exchanging it, even though he may not desire the said object for direct use or for production. It also is an indirect means of gratifying desire.

Subjective use value is most closely allied to the economist's concept of marginal utility. Subjective production value brings in

the concepts of imputation and cost. These two are secondary values. In combination, when two or more subjects are interrelated, they lead to tertiary values which arise in exchange. Then subjective exchange values become possible.

2. Objective Value

Objective values arise when different individuals compare their subjective values through the processes of exchange, thus giving rise to values which are generally recognized. While the notion that society is an organism which, as a whole, makes responses known as "social values", is to be avoided, objective values may be thought of as measuring the relative fitness of objects for the gratification of common human wants.

To illustrate objective value, and incidentally contrast it with subjective use value, one may consider two individuals, who disagree as to whether baking powder A makes better biscuits than baking powder B. Accordingly, their subjective values of the two powders are different. But suppose that the question is submitted to a representative group of individuals, each being given two biscuits of identical appearance but made with the two different baking powders. Each individual indicates in writing his preference. If it be found that nine out of ten agree that biscuits made with the A powder are the better tasting, the relative use value of the two brands of baking powder may become objective.

(1) *Direct Objective Value.* Objective use value may be described as the *generally recognized relative fitness of an object to gratify a desire in consumption*. If one were to say that food has value, or that there are better heating values in gas than in coal, one would probably be speaking of objective use value.

(2) *Indirect Objective Value.* Objective production value is the *generally recognized relative fitness of an object as an indirect source of net income, as through "production"*. The idea of technical efficiency¹³ seems to be the one which underlies this sort of

¹³ Mathematico-price economists deny significance to "technical efficiency". This attitude, however, is merely part of their denial of the significance of the technological viewpoint, although it may involve their tendency to be agnostic as to "causes". Of course, one may assume that the only efficiency is economic effi-

valuation; as, for example, when steam is compared with electricity as a source of power, or motor trucks with railways, or one machine for spinning yarn with another. Perhaps if one were to hear some farmer say, "Land around here is worth more than in New England", one might infer that an objective production value was in the mind of the speaker. It should be noted that such values may be expressed in dollars or other media of exchange, but they are not determined through actual exchange. For example, the statement that "farm land around here is worth about \$100 an acre", might actually be a mere production value; since it might mean only that it produces more grain than some \$90 land.

Objective *exchange* value, another form of indirect objective value, is the *generally recognized relative fitness of an object to exchange for other objects*. It can exist only where there are markets which provide an adequate basis for objectivity in this respect.

3. Preliminary Definition of Economic Value

When the economist says that a thing has value, he does not mean an aesthetic, ethical, or religious appreciation of the object. Neither does he mean an intrinsic quality of an object, one inherent in the object without regard to the desire disposition of the subject. He does not even mean a "primary" valuation, in the sense of a mere want which is not a motivation to specific activity. What he means is that the object in question is valued by some subject, who is in a position to acquire it, that this subject is sufficiently conscious of the importance of the object—motivated by its stimulus—to make a choice, and that he is willing to go to such trouble as may be required to make the desired contact with it. In

ciency. But one may also recognize an efficiency which is on a purely physical level, without regard to cost or scarcity or value of product. A chemist may have two processes for making a gas, and if one "results" in twice the quantity of gas from a given quantity of material, it may well be called twice as efficient in a technical sense. Early aeroplanes were inefficient, not because they cost more, but because they could not develop enough power in proportion to weight, etc. If the result or product has economic value, and choices can be made in materials, processes, and quantities, then costs will be considered, and the technological problems will merge in the economic problem. Thus "technical efficiency" limits and helps to explain economic "products" and "values"—the so-called "scarcities" and "services" of the price economists!

short, he means a sort of quality imputed by man to such objects as are recognized as conditioning desires.

In a preliminary and tentative way, therefore, we may say that economic value is the importance attached to one desired object when compared with another, the object being one upon which an individual in society consciously depends for the gratification of a want or desire.

D. *Various Definitions of Value*¹⁴

In the literature of economics there are to be found many descriptions and definitions of the concept of value. Before attempting a final definition, therefore, it seems well to list a representative number of these, in order that we may test their significance and validity.¹⁵

Some economists' definitions of value emphasize the "subject", stressing the "*estimation*" of the object which occurs in the mind of the subject. Among the more purely subjective statements, we find such as the following:

The estimation attached to goods on account of their utility.

The judgment of the utility of things. (Storch)

Utility in its special relation to the satisfaction of our needs.

The economic measure of utility. (Michaelis)

The measure of utility afforded. (Knies)

The measure of effective or marginal social utility. (J. B. Clark)

The recognized degree of utility of a good. (Rau)

Value is less in the thing than in the estimate that we form of it, and the estimate is relative to our want; it grows or diminishes as our wants grow or diminish. (Condillac)

The significance which a thing, as an object of desire, gains in connection with a proposed end. (Rodbertus)

The significance of those external objects to which man ascribes the capacity to answer any of his requirements. (Mangoldt)

The value of a thing depends upon the recognition of its fitness for human purposes. (Kudler)

The significance which concrete goods acquire for us as a result of our consciousness that we depend for the satisfaction of our wants upon our power to dispose of them. (Menger)

¹⁴ Cf. L. M. Fraser, *Economic Thought and Language*, Chap. IV.

¹⁵ The following definitions are selected to cover all known types of value definition presented by economists, without regard to when, where, or standing of the writer.

The foregoing statements range all the way from a vague general concept of subjective utility, through the concept of a quantity or degree of utility, to concepts which show some recognition of the distinctness and separation between subject and object. All, however, make value entirely dependent upon human ends or desires. We may add to them one formulated by Condillac which, while it places value in the human estimation, recognizes the factor of scarcity in the object:

If the value of things is founded upon their utility, then, utility remaining the same, the quantity of their value (whether more or less) is founded upon their rarity or abundance, or rather upon the opinion that we have of their rarity or abundance.¹⁶

There may be added to this list of highly subjective concepts, a statement from Fetter's *Principles of Economics* which extends the idea to one of general importance, thus tending to pass over into the realm of objectivity:

Value, in the narrow personal sense, may be defined as the importance attributed to a good by a man. (p. 20)

Market values are built up on subjective valuations. The idea of market values, therefore, is that of the want-gratifying power of goods as expressed in other goods, where there are various buyers and sellers. (p. 35)

The definitions that stress "estimation" fall into two sub-groups according to the concept of society involved. One makes marginal utility an individual's estimation, as is true of nearly all the foregoing definitions. The other regards society as an organism, and marginal utility as a social phenomenon, as for example:

Market value is a measure of utility made by society considered as one great isolated being... the social estimate of effective [marginal] utility. (J. B. Clark)¹⁷

"It is society as a whole which sets a value on things."... Value is the "expression of social marginal utility." (Seligman)¹⁸

Next, we find a group of definitions of value which emphasize the object. While often keeping in mind the relation of the object

¹⁶ *Commerce et Gouvernement*, p. 14.

¹⁷ *Philosophy of Wealth*, pp. 82, 84.

¹⁸ *Principles of Economics*, pp. 179, 182.

to the subject, these definitions stress the "*fitness*" or capacity of the thing. Some illustrations follow:

The fitness of a thing, as a means to an end. (Hufeland)

The fitness of a good as a means for human ends. (Lotz)

The measure of the relative capacity to satisfy wants.

Under this head we may also include those statements which, instead of emphasizing the fitness of the object as a means to broad human ends, stress the idea of *cost*, as follows:

The significance of an object attached to it because of the sacrifice saved by it. (Putlitz)

The economic measure of utility relatively to effort saved the possessor by the possession of the utility, or the effort which man is willing to spend for its acquisition. (Michaelis)

Or we find statements including the idea of a balance between utility and cost, as when Schäffle speaks of value as being

The significance of a good as a selective reflex of utilities and costs in the consciousness of an economic subject.

The relation of cost of production to utility. (Engels)

Perhaps Henry C. Carey's famous dictum that value represents the power of nature over man, falls in this category.

Again, there is a numerous group of definitions which refer to value as "*power*"—presumably the power of objects. Scores of definitions might be quoted—from J. B. Say to F. W. Taussig—which in effect merely state that value is "purchasing power".

Value is power in exchange.

The power to exchange for equally valued goods. (Garnier)

The power to command other things that possession of a good gives; [or] The command which its possession gives over purchaseable commodities in general. (J. S. Mill)

Power to procure in exchange [based upon use and scarcity]. (Flux)

Thus J. B. Say puts value in objects, saying:

It is the power of exchanging for other things that makes goods wealth; but that faculty, that quality that we call their value, is in the object that

we evaluate, independently of the subject which serves to make the evaluation.¹⁹

And in his *Traité*, he says:

The items of social wealth are invested with value by the necessity of giving something to obtain them; and that something is productive exertion. (Bk. II, Chap. 1.)

We pass naturally from the foregoing type of definition to one which defines value as a *relation* between or among objects—the *ratio* type of definition.

Value merely expresses the fact of exchange of one thing for another in certain proportions. (Jevons)

Relation between two services in exchange. (Bastiat)

The method of expressing an exchange ratio quantitatively. (Davenport)

The ratio in which the unit of measure of one thing exchanges for the unit of measure of another. (Pantaleoni)

The quantitative relation existing between two things exchanged. (Passy)

The relation with other goods relatively to the quantities which in the market are considered as equivalents, and proportionately to which they are exchanged. (Cornellison)

Rate of exchange. (Taussig)

Some variations of the exchange-ratio definition bring in the bases of utility, or utility and scarcity:

The measure of the capacity of a product to satisfy wants, compared with the like capacity of other products. (Wittelshöfer)

A relation between goods, based on their utility and scarcity. (Galiani)

Finally, we find those definitions of value which identify it with *price*, making the value of a thing consist in the *quantity* of the thing for which it exchanges. For example, H. J. Davenport somewhere says:

Price is value. (Davenport)

The quantity of any other thing that will exchange for a good is its value. (Ricardo)

¹⁹ *Cours complet*, I, p. 37.

The amount of one thing that can be got for another. (Marshall)

The value of a thing means the quantity of some other thing, or of things in general, which it exchanges for. (J. S. Mill)

Outside the field of economic science come such definitions as that given by A. T. Hadley in his *Economics* (p. 92):

A proper and legitimate price as distinct from an unfair or illegitimate one. . . . The value of an article or service is the amount of money which may properly be paid, asked, or offered for it.

Criticism of Definitions

In the light of the earlier discussion, there seem to be objections to all of these descriptions or definitions of economic value.

Some have defined economic value as the estimation of the "subject", making it a sort of mere "interest value". It does not seem possible to consider economics as a social science, and at the same time to define value as a mere estimate of utility or degree of utility, or as being an individual's judgment of either. The question arises, too, if value were a mere individual appreciation and purely subjective, how could we explain generally recognized values, which are in that sense objective? The tendency among such thinkers is to conjure up the unreal figure of a social mind.

On the other hand, some put the value in the object, thus making it a mere "fitness value", thought of as being inherent in the object, or intrinsic. But this seems no more the truth, or an expedient procedure, than the purely subjective approach. Upon examination, we find that the fitness approach breaks down either into a mere subjective use value, or, more usually, into the concept of an intrinsic quality of the object, analogous to such qualities as weight, extension, and the like.

In both these cases, the question arises, whether value comes from the subject and is given to the object, or whether it comes from the object to the subject. The answer seems to be, neither. Both subject and object are factors in the valuation process. The subject is related to the object, and the object is related to the subject; value arises out of such a relationship, and therefore de-

pend upon factors which determine both the interest of the subject in the object, and the fitness of the object with relation to the subject's interest. They thus involve a process of adjustment.

An interesting question is this: Is objective value any more intrinsic than subjective value? At first glance, it seems that an objective value is more independent of the subject, and thus more closely related to the object. This thought, however, will not bear scrutiny. The subject, of which objective value is independent, is merely "any particular subject". There could be no objective value unless there were subjects and subjective value. The matter may be illustrated as follows. Consider any object, say a hat. Say I value it subjectively, and that several other persons also do so. Then we all write our valuations on tags, and attach these to the hat. It may be thought of as bearing a dozen "price tags", none of which is part of the hat, or intrinsic. But now let us compose our different valuations, and reach some agreement as to the value of the hat. By a process of trial and error, we agree that it is "worth \$5", and paste in it a price tag to that effect. Is this price tag any more intrinsic than were the dozen different tags?

The chief reason why an objective value seems more closely related to the object than does a subjective value, is that at any given time it is single. It is apt to be more definite, and may be more stable. It may thus seem to "go along with" the object.

Perhaps equally important, however, is the fact that it need agree with few of the different subjective values of the various individuals in the group concerned. In theory, all that can be said is that objective value must approximate the subjective values of at least two individuals.

Further questions may be asked concerning some of the foregoing definitions, as to whether they include so-called absolute values, or are purely relative. If value is to be considered as an absolute thing, it is either a fixed and invariable "price", or it is a sort of "use value" in which no choice is involved, and the object thus becomes either worthless or invaluable!

Then there is the question as to whether value pertains to means or to ends. The position here taken is that, while economic value

is a member of the family of interacting values which includes ethical, political, aesthetic, and religious values, these several members of the value family are distinct. By the nature of the problem of economic life, economic value appears to concern means, and this gives it a quantitative aspect which does not seem to be possible in the case of those values which concern ends, and are thus essentially qualitative.

There is also the distinction between primary and secondary values to be considered. Some of the definitions that have been cited would leave economic value in the realm of mere feelings or simple perceptions of objects. We have seen reasons for regarding economic value as a secondary value which arises in connection with choices.

Those definitions which refer to economic value as being "power" are open to the criticism that they convey the idea of something that is inherent in the object and which is active or capable of exercising force. Value, however, is neither inherent nor active; it is a derived quality and passive. Moreover, it seems undesirable to limit the general concept of value to value in exchange, as the "power" definition does.²⁰

Again, to regard economic value as the quantity of one object, that is exchanged for another object, is equally unsatisfactory or even misleading. It, too, confines value to objective exchange value. Above all, it identifies value with the concept of "price", which at best is but a concrete expression of value, and may be completely divorced from true objective value.²¹ It may be possible to define value as being the same thing as price, but two different phenomena are involved, and such a course would then make it necessary to substitute some other word for the thing we are to define as "value".

Finally, the idea of value as consisting in a ratio, or rate of exchange, is subject to somewhat the same criticisms as the price idea. A ratio involves at least two quantities, and the question arises, "Ratio between what?" Surely there is validity in a general concept

²⁰ Cf. above, pp. 192-3, 214f., 222.

²¹ The price may be arbitrarily fixed by authority. Even in free exchange it may not be equivalent to any equilibrium, and be below the subjective values of both parties in an exchange.

of being valuable.²² The ratios which we observe in markets are merely expressions of value relationships. A ratio is a mere result or symptom. It cannot be considered from the standpoint of causation or be predicted, unless and until one considers the determination of the values which in turn determine the ratio. Perhaps the futility of the so-called quantity theory of money, with its assumption of the existence of the quality of value—and that in some quantitative degree—illustrates the criticism.²³

Objective exchange values, considered empirically as mere quantitative relations among objects, cannot be dealt with in a truly scientific way, for there is no causal explanation, and therefore no basis for understanding determination or for assuming their existence. They reduce to mere superficial measurements—to mathematics and the simultaneous equations of Walras and Cassel. In the author's judgment, scientific definitions must be in terms of causal forces and functions. Only in such terms, it seems, can one ever be sure that the definition will always define.

E. *Final Definition of Economic Value and Price*

If we attempt to carry out the chain of analysis which has extended through the foregoing pages, we arrive at a highly abstract but fundamental definition, which may be formulated as follows: Economic value is that function of the relation between a subject and an object, which is derived from the direct motivation of an individual by the means to the fulfillment of a desire tendency. (It will be remembered that desire involves a consciousness of the separateness of subject and object, and choice.)

With more idea of applying the definition of value to concrete cases, however, we may define it in somewhat different terms. From this standpoint, we may say that *economic value is the relative importance which is attributed by mature individuals to scarce*

²² Laid, *The Idea of Value*, p. xiii, says: "Equivalence in value presupposes the values that are equivalent. A very brief effort in analysis, consequently, carries us beyond any ratio of values to the consideration of values themselves". And on page 10 he truly observes that economic values are conceivable without either money or exchange. This suggests B. M. Anderson's position in his *Social Value* (1911).

²³ Cf. below, pp. 412-414 where the quantity theory is criticised in more detail.

objects considered as a means of gratifying desire, as shown in choices made between two or more such objects.

Supplementing this general definition of economic value, we may define *subjective economic value* as being a judgment of such a relative importance as made by an individual. Similarly, we may define *objective economic value* as such relative importance when generally recognized by a number of individuals, and capable of expression in the ratio according to which objects are exchanged for one another by such individuals.

A price, *when freely paid*, is the most concrete and definite manifestation of economic value. It is "what is paid" for a valuable good. Thus a true definition of price will state that it is the quantity of one good (usually money) that is given in exchange for another good.

The usual definition of "price" as being "value expressed in terms of money", is inadequate and unfortunate, for the following reasons: (1) A price is not necessarily measured in money, and in cases of barter, the definition does not apply. (2) A price may be "fixed" by authority without regard to any objective value. (While such a fixed price may result in little buying and selling, it may apply to any exchanges that do occur.) (3) Inflation may result in raising all "prices" without any change in values or the *relative* importances of goods.

In the case of objective exchange value, while the essence is relative, the emphasis is on the object to be secured in exchange, regarded as related to the "end" of the buyer's desire gratification. The essence of the price concept, however, is found in the emphasis upon the thing paid, regarded as a "cost" to the one who buys. I "pay the price", and it is "what it costs me". Thus there must be some "price good", which may or may not be money. A quantity of this good is given for another. It measures the rate of exchange in an actual transaction, and is thus completely and essentially objective.

For example, one often hears the question, Is it worth the price? But it would be impossible to ask, Is it worth its value?

In presenting these definitions, it is recognized that "desire" in

the mature individual may be emotional or reflective, or mixed. A desire may be associated with different valuation attitudes or interests, not only economic, but also aesthetic, ethical, political, or religious. But when the desire motivates activity with reference to scarce external objects, the fulfillment of which motivation requires an equilibrium between tendencies toward and tendencies away from such objects, it is immediately economic. Finally, desires may be positive or negative. The former are desires *for* some object, and are tendencies toward it. The latter are desires to avoid some object, being tendencies *away* from it or resisting activity toward it.

The "importance" referred to, concerns the intensity of motivation as evidenced by responses made to stimuli of all sorts. This may be on the basis of a direct utilization (use value), an indirect utilization (production value), or an exchange (exchange value). The term "scarcity" is purely relative, and significant only in relation to want. It may be an automatic or "natural" scarcity, or it may be a controlled "artificial" scarcity. As to "objects", these may be appropriable and transferable or not. The value, however, can be objective only when it is generally recognized, and this condition requires either (1) freedom of exchange among those participating in the general recognition, or (2) coercion by some authority. Furthermore, value is unlikely to be objective unless it can be definitely associated with some object, which association is hardly possible—so it seems to the author—unless the object be transferable. As to "general recognition", that may vary in degree according to the breadth or scope of the economic society, or, as an economist might say, the width of the market. If only two persons are involved, the general recognition may be a sort of duet.

The importance of stipulating that values "emerge" through "choices" lies in the point that they involve some mental decision.

One does not have to go far in the reading of economic literature without realizing that one source of confusion lies in the use of the term value in combination with modifying words or phrases which greatly alter the meaning of the word. The early Classicists' discussion of the so-called "value in use" as opposed to "value in ex-

change", is a case in point. Most economists tend to avoid or conceal this difficulty by a more or less narrow use of the term value, while supplementing it with such terms as utility and marginal utility. Some, however, have distinguished subjective value, and it is common enough to oppose this to exchange value, the latter being thought of as objective. (Of course, the bulk of economists is meant, and all students are aware of the more refined classification presented by members of the Austrian School and a few others.) As elsewhere in economics, the terminology is confused and confusing.

In view of this situation, and in view of the fact that the term, value, is one in common use, would it not be wise to adopt some such procedure as the following:

(1) Let "value" be used to designate a broad concept of relative importance expressed in choice (secondary and tertiary values), as developed in the preceding pages.

(2) Then social science will find it necessary to distinguish between the different kinds or levels of value—economic, ethical, political, etc.—and the economist will be primarily concerned only with "economic value".

(3) The term, "price", should be used only to designate the quantity of one good paid for another.

(4) In dealing with economic value, economists should distinguish sharply between subjective and objective values, each of which may be for use, for production, or for exchange, as outlined on page 214f.

(5) The term, "subjective worth", is needed to designate an individual's valuation, in the nature of marginal utility, which involves an equilibrium between positive and negative desires, or utility and cost, with reference to a single good.

(6) It would then remain to reach some decisions concerning "primary values", and the use of such terms as "utility" or "worth". From the genetic standpoint, something may be said for the term, "primary value", and this thought is emphasized by the fact that "utility" is a misleading term on account of its uncertain psychological and ethical implications. It may well be doubted, however, whether this standpoint will be widely adopted, and in view of

the practical problems of usage, it will probably be well to retain such terms as utility and marginal utility, which have become so generally established. In that event, it is highly important to define the terms more precisely, and to orient them accurately with relation to the psychology of human motivation.

Chapter V

THE DETERMINATION OF ECONOMIC VALUE ¹

I. INTRODUCTION: CAUSATION VS. DETERMINATION AND MEASUREMENT

To *cause* value is to create the conditions which are uniformly found to precede the existence of the quality of value in some object. Since this quality does not exist in all objects, and may be varied in degree, it is not to be lightly taken for granted. It requires explanation.

The question, *Why* things have the quality of value, which is the question of causation, was answered in Chapter III. Now it remains to inquire how we measure the quantity of value a thing has, and how this quantity of value is determined.² To ascertain *how much*

¹ E. Böhm-Bawerk, *Positive Theory of Capital* (1930), Bk. III; "Grundzüge der Theorie des Wirtschaftlichen Güterwerths" in Conrad's *Jahrbucher f. Nat. Oek.*, N.F. XIII (1886).

J. E. Cairnes, *Leading Principles*, Pt. 1. (1874), II-IV.

T. N. Carver, *The Distribution of Wealth* (1932), I.

E. Chamberlin, *The Theory of Monopolistic Competition* (1933).

F. A. Fetter, "Markets and Prices" and "Costs, Prices, and Profits" in *Economic Principles and Problems* by Spahr and others, I (1936), 18 and 19.

W. S. Jevons, *Theory of Political Economy* (1924), II-IV.

A. Marshall, *Principles of Economics* (1920), Bk. IV, Chap. III, and Bk. V.

V. Pareto, *Manuale di Economia Politica* (1906); *Cours d'Economie Politique* (1896).

D. Ricardo, *Principles of Political Economy and Taxation* (1817).

Joan Robinson, *The Economics of Imperfect Competition* (1933).

H. Schultz, *Statistical Laws of Demand and Supply* (1928).

K. Wickseil, *Lectures on Political Economy* (transl.) I (1934), Part I.

P. H. Wicksteed, *The Common Sense of Political Economy* (1910), VI-VIII.

F. von Wieser, *Natural Value* (1893), II and V.

² To "cause" is to produce an effect, in the sense of being a condition necessarily preceding the effect. To "determine" is to fix limits, thus deciding the quantity of the effect that will be contained. The conditions which fix these limits explain the reason for the resulting quantity. To "measure" is merely to ascertain the quantity of a thing by means of a process of comparing it with some definite unit of quantity.

value an object has, is to "measure" its value; and clearly this must be done if one is to solve the problem of determination. No quantity can be "determined" unless it can also be "measured". But the question then arises, What "determines" how much value the object has? Why the quantity?

The situation is analogous to that found in dealing with such physical phenomena as light. We say that light is "caused" by vibrations in the ether, or by rapidly moving particles, or otherwise, according to our theory of light. We "measure" the quantity of light when we compare some light-giving object with a candle to ascertain its candlepower. We "determine" the light given, when we ascertain *why* the object gives out a measured quantity of light.

A theory of causation is essential to an understanding of determination. Before one can understand how any phenomenon is "determined", one must know the nature of the conditions which are uniformly associated with the existence of the phenomenon—the "causal forces", as they are sometimes called. Otherwise, the procedure would be merely empirical. One could never be quite sure that the quantity of value might not vary without relation to any "determining" limits not based upon causal forces.

This is especially true in all cases in which the "cause" lies in human activity, and in which, therefore, the problem of motivation arises. For example, if a good be produced by labor, the labor energy required may be said to be the cause, or causal force. But labor has to be "motivated", and is exerted only as stimulated by various positive and negative desires, some of which are related to the product. Thus labor, is, at most, but a proximate cause, the more ultimate cause lying in the motivating desire-tendencies which induce the labor. Moreover, the "product" as an economic quantity, is characterized by the quality of value, which cannot be explained except in relation to desires. Neither can the quantity of the value quality be explained except in relation to the intensities of the motivating forces. Thus only, can the economist reach a fundamental understanding of value "determination".

Not the least significant point in this connection is the fact that by proceeding toward a solution of the problem of determination,

along the lines of causation, it becomes possible to avoid the common error of mixing cause and result, or reasoning in a circle. This error is probably met with as frequently in economic thought as in any other field. For example, economists need often to be reminded that exchange is not the cause of value, and that value is not a mere ratio. This becomes obvious when we ask the question, Why?—Why the particular exchange? Why the particular ratio? At once, it is seen that one person may say that objects are exchanged because of their values, while another person may say objects have values because they are exchanged. As usual in such cases, it will be found that the difference of statement is due in large part to a play upon the word “value”—in this case, subjective and objective values are confused—and arises from the lack of a theory of the cause of value. Only by establishing such a theory can one be certain of avoiding circularity of thought.

The foregoing study of the genetics of value has provided the basis for a correct start. It has shown that, in the first place, exchange is based upon differences in subjective values,—not value in a general sense, which might include objective value, but value only in the subjective sense. In other words, exchange rests upon potentials which are different in different minds. Then the act of exchange is conditioned by the unsatisfied want, or profit motive, or desire for display, or other “human” tendency.

Then, when exchange occurs, the act of exchanging affords an objective manifestation of a relation between subjective values. Individuals do not compare subjective values,³ for the individual's comparisons of his own valuations *are* subjective values. In the process of exchange between two individuals, however, a new phenomenon arises, which is objective, in that it is participated in by two or more individuals. Exchange value, therefore, arises as the result of forces which determine comparison and choice on the part of individuals. It represents the process of translating subjective values into objective values.

To answer the question suggested above, therefore, we may say

³ Note that “subjective value” is very different from “marginal utility”. It is a “secondary value”; while marginal utility is “primary”.

that goods are exchanged because of differing subjective values, and they get objective values because they are exchanged.

It follows from the foregoing that in discussing the determination of objective value, we must first consider the determination of subjective value.

II. DETERMINATION OF SUBJECTIVE VALUE ⁴

The simplest case of economic value is found in a single individual's choice between two objects of desire. The case is so simple that it does not seem necessary to give any illustration. It involves directly only the one individual's own valuations, which we may describe tentatively as his respective marginal utilities for the two objects in question. The process is one which takes place entirely within a single mind, and consists of a comparison which involves some sort of a balancing of desires or desires and aversions (utilities and disutilities).

A. *Marginal Utility*

Thus the individual compares what may be called "primary values", or what the economist calls *marginal utilities*. The subject of marginal utility is so generally discussed as to make it quite unnecessary to undertake to give a complete account here. It does seem desirable, however, to stress certain points concerning the subject which are all too often the seat of misunderstanding.

To begin with, the existence of some want will be assumed, and furthermore, that this want is not "absolute". Then, with relation to such a want, the statement may be made that the degree of an individual's desire for any one of a limited number of units of a given object, is the marginal utility of the object. With this general understanding, the following points are to be stressed:

Marginal utility is a significant concept only if the object be *divisible* into homogeneous and equal parts, or itself be one of a group of similar objects. Marginal utility can be conceived of definitely only as it is possible to think of a series of "units", and a

⁴ See S. J. Chapman, *Outlines of Political Economy*, Chap. III; R. T. Ely, *Outlines of Economics*, Chap. IX (5th Edit.).

process of variable degrees of utility according to the principle of diminishing utility. In the case of houses-and-lots, for example, the technique of diminishing utility and marginal utility is usually not applicable, one result being that the real estate market is not well organized, nor are its values nicely determined in an objective way. Thus the significance of technology is apparent.

Any kind of a want is the basis of utility, and therefore of marginal utility. The want may be reflective or impulsive. It may be right or wrong.

One question, however, which arises in this connection is, What if the want be very indirect, as in the case of such goods as capital instruments and money? These things are not wanted for themselves. If, therefore, they can be thought of as having marginal utility themselves, it can only be in some sense which is different from the idea of utility as applied to the more directly wanted consumption goods. While it may be conceivable that one can speak of an "indirect marginal utility", it seems more true and expedient to regard the individual valuations concerning instruments of production and money as being subjective worths, as distinguished from marginal utilities. They are, respectively, a sort of subjective production value and a sort of subjective exchange value. The utility of the production good lies in the product; the disutility, however, is directly associated with the agent, the functioning of which involves "cost". Thus there is a comparison or ratio between two logically separable quantities. Money has importance as general purchasing power, and will buy goods that have marginal utility. When I compare \$5 with a pair of shoes, what I am doing in the last analysis is to compare what I did to get the money with my marginal utility of shoes. (More immediately, however, I may compare shoes with some other good or goods which \$5 will buy.)

While no one would be inclined to deny the fact, it is all too common to forget that any one "unit" in a series is related to all other units in the series, and that the marginal unit is marginal only because of its being one of a group which includes a certain number of other units. Very pertinent, is the old problem as to who is responsible for the sinking of a raft which floats while only nine

men are on it, but goes down when a tenth man steps upon it. A moment's thought convinces one that, while the tenth man may be morally responsible, the scientific fact is that the combined weight of the ten men is the proximate cause of the sinking of the raft. In other words, the act of the man who steps on just before the raft sank appears to be so crucial only because nine other men were already perched upon it.

A corollary of the foregoing thought is that marginal utility necessarily includes the idea of a quantity of an object, and *is not purely subjective in the sense that it exists in the mind of an individual without relation to the objects confronted by the same individual*. In fact, marginal utility may be thought of as a sort of demand and supply relationship, not in a market, but within the mind of the single individual. It is a relationship between his want disposition and capacity, and the quantity and nature of the objects which are related to the foregoing—thus involving a technological point of view. Thus it is that the law of diminishing utility states that, other things being equal, the larger the quantity of a good, the lower the marginal utility tends to be. *The attempt to explain value in terms of marginal utility does not avoid the problems of supply and disutility cost.*

Incidentally, it should always be borne in mind that the so-called law of diminishing utility is in reality the law of diminishing marginal utility, and it would be conducive to clarity so to call it. After all, that which diminishes as the quantity possessed or consumed increases, is marginal utility.

Finally, it is of some importance to note that the quantity of the object involved—the number of units—may be thought of in several different capacities. One may think of the number of units that are *consumed*, with “repletion” as the probable end of the process. Or one may think of the number of units *possessed*, with “satiety” as the culmination. Or, again, one may think of the number of units *desired and available*, and, this being the broadest aspect, it may be said that multiplication of the quantity available may lead to a condition of worthlessness. Accordingly, the law of diminishing utility may obviously be based upon a diminution

either in consumption utility or in possession utility, and possibly in availability utility (desirability) as affecting the general interest of a subject or subjects in an object as a potentiality.

These limitations on the physical quantities of objects are important in determining marginal utility. A fixed quantity or an absolutely limited number of units of any object may be said to be as important a factor in determining the marginal utility of the thing as the desire disposition which characterizes the subject. Or if it be the aversion to labor, or the operation, direct or indirect, of any cost limitation which affects the quantity that the individual cares to possess or consume, we must reflect that such aversions or costs are a function of two variables. One of these lies in the nature of the individual; but the other is found in the technological nature of the object that has to be caught, picked, hammered into shape, or otherwise operated upon by the subject whose desire is the other variable.

Again, the reader is reminded that marginal utility may also be referred to either as a "primary value" or as a "subjective worth", although the latter term had better be reserved for cases in which disutility cost is involved, as will be explained shortly.

Marginal Utility as Subjective Equilibrium; the Problem of Hedonism

One of the numerous sources of confusion in economics is the fact that the concept of utility is so ambiguous that "marginal utility" has different meanings to different economists. In reality, there is a double meaning. Utility may mean either (1) desirability or (2) want gratification, and marginal utility may mean either (1) a degree of desire for a good or (2) the capacity of a unit of the good to gratify a want.

Herein lies confusion concerning the motivation of economic activity, and the problem of hedonism. Unless under compulsion, men choose and act according to desire. The gratification they get is a result of the choices they make. This gratification, however, may or may not be in proportion to desire intensity. Thus we may say that gratification-utility has some relation to desire-utility; and

it may be that through experience, memory, and imagination, men come to make some choices on the basis of anticipations of imputed pleasure feelings. But the fundamental motivating "force" in economic life is desire, positive or negative, or marginal utility and disutility in the sense of desire intensity.

Clearly "desire" and "gratification" are not the same; nor are the two necessarily equal in intensity or quantity. Accordingly, it is important to understand that the determination of marginal utility in reality may be the result of a balance between the two states of mind just referred to. To this extent, the situation resembles the balancing of demand and supply forces in markets. Desire intensity is somewhat analogous to demand, and gratification may be

likened to supply. Moreover, the satisfaction of desire is at the expense of an exhaustion of capacity to feel gratification, or a feeling of fullness that acts as a sort of negative desire, or cost. The idea is illustrated in the accompanying chart.⁵

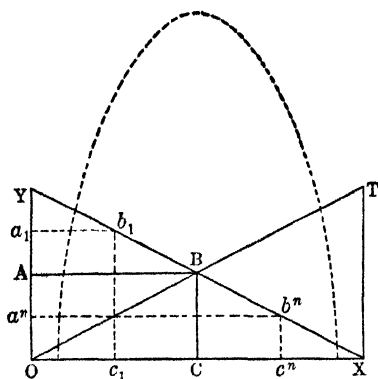


FIG. 1

has any desire, and may be the stock of that good which is available to the individual. Let the line OY represent the scale of desire tendency for any individual, so that on it will be measured degrees of utility in the sense of desire intensity. At the same time, let the line TX represent the scale of sensations of pleasure or gratification, so that along this line can be measured degrees of utility in the sense of intensity of pleasurable sensations.

The area OXY may be thought of as representing the "desire disposition", or capacity to desire, of the individual. The area OTX

⁵ The author is aware that the chart is crude, and that it does not allow for various complications. It is presented, however, as being adequate for the purpose of clarifying the economist's application of psychology.

represents the said individual's gratification-sensation disposition, or capacity to feel gratification—all with relation to some particular good.

We start with positive desire as being the motivating tendency to act or do something with reference to an object, thus considering first what happens in the area OYX, beginning with a desire intensity of OY and a unit of the good at O. Let the case be one of actual consumption.

As the first unit of the good is consumed, it registers at O, where it affects the desire of the consumer. But it also results in reducing his total stock of the good, OX, and accordingly this first unit consumed is subtracted at X, reducing the quantity, OX, proportionally. Then as consumption is increased continuously, two movements occur along the axis, OX: the number of units of the good consumed increases from O toward X; and the number of units that can be consumed,⁹ or that are available, decreases from X toward O. This is a common experience. Say one has a box of candy, or cigars, or any aggregate of goods which one desires and enjoys in consumption. As one consumes, the number of units consumed and "enjoyed" increases, while one realizes that the box is being emptied, and that the supply will eventually be used up. Both phenomena are real and important. They both affect the motivation of most individuals, one tending to reduce desire as satisfaction is approached; the other tending to increase desire as the means of gratifying it is exhausted.

Thus the fact is that two interrelated but logically separable pairs of movements occur:

(1) As units consumed increase from O to X, the positive force of the individual's desire intensity, regarded as a feeling of lack and as a tendency to consume, declines, as indicated by YX. At approximately the same time, the negative force of growing fullness, or increasing incapacity for sensations, is indicated by OT.

(2) As units available for (additional) consumption decrease from X to O—as the box empties—the individual's desire tendency is modified by increasing scarcity, as indicated by the line XY. This

⁹ This may be because of scarcity, or because of limited desire and gratification capacities.

increases his capacity for desire intensity. At approximately the same time, we find that the intensity of the individual's sensations, or gratification per unit consumed, declines from TX (assuming that the first unit consumed yields the greatest gratification) to O.

At the same time, the intensity of desire per unit, which is the feeling of lack or incompleteness, declines, as indicated by the line YX. But almost simultaneously, the intensity of gratification per unit, or the pleasurable sensation declines, as successive units are withdrawn from the quantity available, as indicated by TO, and the individual's total gratification, or sense of completeness, grows, as indicated by the area OTX. Thus it may be seen that there are at the same time a declining intensity of desire, a declining intensity of gratification, and a rising degree of satisfaction.

At the point B, where the two lines, YX and OT, intersect, the degree of unsatisfied desire (BC) is equal to the degree of satisfied desire (BC), and the positive drive which arises from the sensations attending incompleteness or emptiness (BCX) is as near as possible to equilibrium with the negative action of the sensations of fullness (BCO).

In this sense, there is an equilibrium: in the line, BC, *marginal desire-utility equals marginal gratification-utility*. As consumption increases up to this margin, there is a gain in the total net gratification. Beyond that point, there is a loss. Thus the area OABC represents the normal or maximum "primary value" of the individual's stock of the object in question, and BC represents the normal marginal utility.

The dotted parabolic curve is drawn to indicate the general course of the quantity, marginal desire-utility times number of units consumed. This may be called the individual's desire-fulfillment quantity. Thus it represents the rise and fall of a series of areas such as $Oa_1b_1c_1$, OABC, $Oa_nb_nc_n$, etc.⁷

⁷ These areas are all considered to be in the triangle, OYX, because it is the motivating desire area. If the sensation area, XTO, is equal, this point is unimportant; but if it is not equal, the area of maximum desire fulfillment, OABC, would differ from a similar area of maximum gratification-sensation. It would then be possible to draw a separate parabolic curve corresponding to a series of varying gratification-sensation rectangles located within XTO.

Incidentally, we note that since an individual's capacity to desire (OXY) may differ from his capacity to feel desire gratification (OTX), his economic life may be unbalanced, and his functioning may tend to increase instability.⁸

Such being the nature of marginal utility, and something of its significance as a sort of primary value, it remains to be noted that marginal utilities may be compared. At any given time, an individual can say, I want this object more than that object, or I like these two things equally well. Such a valuation need not be reflective, but it is none the less a choice, and it means that the individual is revealing the fact that one object has a higher marginal utility than another, or that two objects have equal marginal utilities.

Such a process is the basis for arranging objects in a scale of their importance to any given subject.

This is a step in measurement, and none the less so because it is not one which ordinarily may be directly measured in objective quantitative terms. It is valid, however; and is valid just because it does occur within the mind of one individual. Furthermore, it is valid only within that one mind. It has no objective validity.

Any point on a scale representing the importance of a series of units of an object can be a marginal point, and represent a "marginal" utility. Then such an object may be compared within the individual's mind with another object, on the basis of their marginal utilities, as indicated in the statements already referred to. Such comparisons give rise to "subjective values".

B. Marginal Disutility, Cost, and "Subjective Worth"

Thus far, in discussing marginal utility, aside from the brief mention of the "subjective worth" of instrumental or producers' goods and money, only positive desires have been considered; and marginal utility has been treated as a function of a given desire and any given quantity of goods related to that desire. But there are "negative desires", and these may limit the motivation coming

⁸ If desire be more intense than sensation (pleasure and feeling), the line OY will be longer than the line TX, and the area OYX be larger than OTX. Then BC will lie further to the right, and the tendency will be to consume more units of the good in question.

from positive desires in somewhat the same way that the growing feeling of fullness, or degree of gratification, has been found to do.

By negative desire, the author means a desire "not to do something". If we mean by "desire" a state of mind that causes a tendency to "do something", the reason for the foregoing general definition is apparent. This negative desire, however, may have a positive significance, as is suggested by the meanings usually attached to such terms as aversion, dissatisfaction, or disutility. It is such feelings as these that are associated with the idea of real cost, psychic cost, or cost proper, as opposed to expense cost. The following list of terms, as arranged in pairs, illustrates the various aspects of opposing human attitudes in making a choice:

Positive desire	Negative desire
Desire	Aversion
Utility	Disutility
Gratification	Dissatisfaction
Pleasure	Pain
Income (gross real)	Cost (real)

At once, it is to be noted that "cost", regarded as a feeling, is another term with a double meaning, and that this, as is the case with the term "utility", has caused confusion. In the sense of dissatisfaction, cost refers to feeling content without implying any motor tendency. Much the same may be said of disutility, pain, etc. One may suffer in silence, and feel without acting. But negative desires—perhaps described in part as aversions—are desires to do something in the sense of stopping or changing—even if it be only to do nothing!

So regarded, cost becomes a force, coordinate with desire (positive), and it may be kept free from hedonistic implications. (In this, it stands opposed to "pain cost" or dissatisfaction.) At the same time, it becomes possible to treat so-called pain costs or dissatisfactions as related to aversion costs or negative desires.

Thus it is necessary to consider a balance or equilibrium between utility and cost in the sense of positive desire and negative desire or aversion. If in Figure 1, the line TX represents a scale of disutility-cost intensity, and the line OT represents increasing desire

not to do something, or cost, the idea may be illustrated. On OX, we measure the physical units of some good which is being produced or acquired by the individual whose feelings are involved. As before, desire intensity, as measured on OY, decreases along YX. In this case, however, marginal utility and marginal disutility cost coincide in the line BC.

This sort of equilibrium thus involves a cost—an overcoming of the resistances to doing what is necessary to establish the desired contact with the good, that are set up by negative desire or aversion. It is, accordingly, less apt to be disturbed by desires that run beyond a consumption or acquisition of goods in excess of the quantity, OC, or a marginal utility less than BC.

Accordingly, too, the tendency of the subject toward the object is different from that which is associated with mere marginal utility. We may therefore call a marginal utility that is associated with disutility or aversion cost, and tends to be in equilibrium therewith, a *subjective worth*. Subjective worths, like marginal utilities, are the immediate raw materials for individual choices, or values of the subjective sort.

C. *Subjective Value* ⁹

By subjective value is meant the *relative* importance of objects to mature individuals, as judged by choices made.¹⁰ These choices may be entirely within the individual's own mind, as when one "says to oneself" that one prefers this or that. They may, however, be made known objectively by some act on the individual's part which indicates his preference. This act may be one of consumption, or of effort to secure some object for consumption; it may be one of trade or exchange; it may consist merely in an open bid or offer that the individual makes.

Choices, as already pointed out, may be either reflective or impulsive. In either case, however, there is involved in the choice a

⁹ See references on p. 161.

¹⁰ While the author presents some analysis of human motives, "states of mind", etc., the fact that the mature human individual does act in ways which we take to represent as choices, preferences, or indifferences, is the essential point.

conscious or unconscious balancing of two or more desires which have a sufficiently definite degree of intensity to allow a balance to be struck—an equilibrium to be established. In other words, it is marginal utilities or subjective worths that are compared. For example, if the case of a Robinson Crusoe or other isolated individual be assumed, we may inquire what would take place in his

mind if he were confronted with the problem of evaluating two objects, say berries, and powder for his musket. The accompanying simple diagram may be used to illustrate the situation.

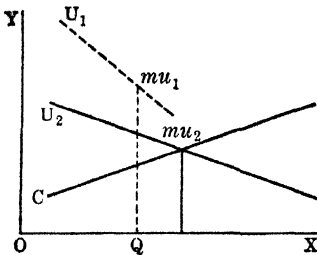


FIG. 2

degrees of desire for the two objects. The curve marked U_2 represents the diminishing desire intensity for successive handfuls of berries. The dotted curve U_1 represents the diminishing desire intensity for successive charges of powder. The ascending curve C represents the increasing aversion to scrambling around and picking additional handfuls of berries. The line OQ represents the fixed quantity of powder which our Crusoe has.

Under these circumstances, a little thought shows that the solid vertical line which is dropped from the intersection of the two curves U_2 and C , at right angles to OX , represents the subjective worth of berries, since it is the point at which desires and aversions are in equilibrium in Crusoe's mind.¹¹ Similarly, the dotted vertical line which is erected on the axis OX at the point Q to intersect the curve U_1 , represents the marginal utility of powder, the difference in this case being that there is no question of aversion or cost involved in the determination of the marginal utility.

It then becomes a relatively simple matter in theory to determine the subjective value of the two objects in question. Crusoe's

¹¹ It is of some importance to note that this expression implies no theory as to what "the mind" is, or as to the nature of so-called mental or nerve processes.

choice will be the expression of the relative magnitudes of the subjective worth of berries, which may be called mu_2 , and the marginal utility of powder, which may be called mu_1 . In other words, the subjective value of powder with relation to berries is the ratio $\frac{mu_1}{mu_2}$, or approximately two to one.

Many complications might be introduced, but the foregoing is the general explanation of all economic subjective value.

At this point, however, a reference should be made to the different kinds of subjective value, to which some attention has already been devoted. The kind of subjective value illustrated above is subjective *use* value. In the case of the powder, however, one may see a mixture of subjective *production* value, since the valuation of the object is based not on a direct desire, but on an indirect one. Subjective production values are more complex than use values, since they embrace as factors such considerations as technological efficiency and considerations of cost, as well as the marginal utility of a product which has to be imputed to some instrument of production.

Then there is subjective exchange value, in which the individual's choice is determined by the importance of the object as a medium of exchange. In this case also the conditions affecting the choice are complex, for they involve not only the quantity of the object possessed, but a judgment as to the general acceptability of the object to other individuals, and also the margin of consumption of the individual who has the good. The latter is the measure of this individual's general degree of satiety—the extent to which he is able to gratify his wants, not only for the good in question, but for all goods which he considers.

In an exchange economy, subjective values are made effective through exchange. Thus they find expression in bids, which Alfred Marshall called “demand prices”, or in offers, which Marshall called “supply prices”. Usually these bids and offers are expressed in terms of money. They are in no case, however, actual prices. They do not represent objective phenomena. They are mere expressions of individual subjective values.

Of course, such subjective values, and their expression as bids or offers, may be modified by social "participations".¹² Frequently one finds the force of imitation influencing the action of prospective buyers or sellers. In many cases, too, we find that markets already exist, and that with them one finds an existing price structure. The bids and offers, and the resulting changes in price which may follow, are thus to be understood as immediately conditioned by such phenomena. In no ultimate scientific sense, however, do these conditions become a part of the fundamental theory of value. Always there is the question, What is it that is imitated, and *why*? What is the existing price structure, and why does it exist at the given level?

D. Elements in Buyers' Bids, or "Demand Prices"

A very common definition of demand runs somewhat as follows: "Desire backed by purchasing power". More careful statements of this idea avoid saying that demand *is* desire, and instead say that it is determined by desire, together with purchasing power. Without any detailed consideration of the adequacy of this approach, we may accept it as indicating the general nature of that force which economists call demand, and which enters into the determination of value.

This statement of the case, however, is so general that it can hardly satisfy anyone who seeks a complete explanation of economic value. Desires are of various sorts, and may themselves require explanation. They are certainly not coordinate with so-called purchasing power, and the relation between the two is not easily explained. The logical procedure, therefore, is to present a reasonably detailed and complete analysis of the essential elements in demand, in the sense of the commonly accepted statement quoted above.

1. "Buyer's Worth"

The first essential in the determination of a buyer's bid or demand price is the element of "buyer's worth". This term is used

¹² See above, pp. 173, 180, 183.

to describe a valuation, more or less complex, which is based on a marginal utility, a subjective worth, or on a subjective value, affecting the action of a potential buyer. It may be illustrated as follows:

(a) If the potential buyer is in the attitude of a would-be consumer, who considers the object in question as a direct means of gratifying his desire, we find the "buyer's worth" to rest directly upon marginal utility. It depends upon the degree of desire, or feeling of desire intensity, with reference to a particular good.

(b) The buyer's tendency, however, may be a more complex one than can be explained by a mere marginal utility; it may involve subjective values. Probably this is most frequently the case, since consumers today rarely confront a given object without being influenced by other objects in connection with which it will be used. The subjective value is likely, therefore, to be a subjective use value. If, however, the desire for the object is indirect, it may be a subjective exchange value that functions. This would be the case in the mind of a merchant who bids for goods with the idea of selling them. Commercial bids no doubt rest immediately upon subjective exchange values, and are directly related to the profit motive.

Buyers' marginal utilities are affected by the quantity of the object which is available. This quantity may be the quantity which the buyer himself has on hand, or it may be the quantity which the sellers hold. In the latter case, the buyer is often uncertain as to the exact amount, and may be influenced by mere guess or rumor. It is in this connection that we find in business so frequently that markets are affected by reports on production, visible and invisible stocks, shipments, and the like. As the buyer of a particular good, I may be influenced by the stock of that good which I have on my own shelves (either as a consumer or as a merchant). Again, I may be influenced by some estimate of production.

For example, I am likely to lower my bid for cotton if the average of the private estimates of the cotton crop shows a material increase, although the crop may not be marketed for another month or two. We find that statistics give information concerning some commodities which shows the total quantity available, which

may be broken down into the current production, the imports (minus exports), and the stocks on hand, which may be divided between "visibles" and "invisibles".

Thus it is of interest to note that, in reality, the quantity of the object affects not only the tendencies of those who hold the object for sale, but also the desires of those who would buy it, and that this effect has two aspects, depending on whether the quantity is in the buyer's or the seller's hands.

It is in connection with this general "buyer's-worth" aspect of demand, that we find a large part of the significance of "substitutes" and "complementary goods." Thus the importance to me as a buyer of cottonseed oil is affected by the supply quantity of lard, or possibly some other vegetable oil. As a matter of fact, two objects which are *substitutes* in the economic sense may be regarded as jointly constituting the total supply of the means of gratifying a certain desire. On the other hand, two objects which are *complementary*, have their importance to the buyer more or less dependent upon their possession of the qualities which fit them for harmoniously complementing one another, as well as upon their relative abundance.

Perhaps, too, this is a good point at which to recall that a given physical object may have qualities which fit it to gratify several different wants. In other words, a single good may have different utilities. The demand for such a good may then be composite in the sense that it will come from different desires, possibly felt by different individuals. The classical illustration of the canoe with its capacities to provide beauty, buoyancy, and so forth, as developed by J. B. Clark, will be recalled in this connection.

In addition to the foregoing elements, we may sometimes find in "buyer's worth" an element of "opportunity worth",¹³ meaning a valuation based upon some opportunity to buy which has been forgone. Thus, if the buyer formerly has had an opportunity to buy a good at a lower price than the one at which it is now offered for sale, he may refuse to buy now at the higher offer. To the extent that he refuses to do so solely because his tendency to buy is affected

¹³ The student will observe that this is analagous to "opportunity cost."

by the past "opportunity", the element of "opportunity worth" is the decisive factor. This element in the demand for a good, however, is not fundamental or necessary. It does not enter into the determination of the general level of the value or price. But it doubtless helps to maintain a sort of continuity in demand schedules from time to time.

2. Buyer's Will, or "Sentiment"

Any man of practical experience with markets knows full well the importance of so-called market sentiment. Always in some kinds of markets, and sometimes in all markets, it seems that prices hinge upon so-called sentiment. To the author's way of thinking, this is essentially a matter of *the "will"*, as distinguished from such feelings as desire, or any reflective choice that expresses reason. Hence the adoption of the term "buyer's will."

It will, of course, be recognized that this element in the attitude of buyers may have a direct effect upon the marginal utility of the good to the buyer. If his emotional attitude towards the object is changed, he may not have the same want or degree of desire for it. At this point, however, we are considering the sentiment factor as having a more complex bearing, and as affecting the buyer's subjective values or bids more directly.

This is the important emotional or unreflective element in economic life. It is the condition which explains so much of the irrational action of markets. Perhaps the most frequently witnessed manifestations of sentiment are those of fear, hope, anger, revenge, and display. The sentiment of market pessimism is apt to be associated with fear, while the sentiment of optimism is generally associated with hope. The attitude of one who buys in order to deprive another of the good in question, may reflect anger or revenge, etc. The point is that these emotions or sentimental "feelings" affect the will, or in other words, they affect decision and action. For example, they may lead one to refuse to buy, or to hesitate in buying, even when a desire of considerable strength exists.

Rising prices, particularly when not foreseen or understood, gen-

erate feelings of optimism and induce a will to buy; falling prices have an opposite effect. The condition of "uncertainty" which one often hears referred to as existing in a given market, or in markets in general, is one which has its most direct effects upon demand through influencing sentiment, and will to buy.

Of course, too, there are the usual human characteristics, such as pride of opinion, obstinacy in "holding a position" which one is known to have taken, consideration for "what others would say", and the like, throughout a long list of common tendencies that might be mentioned.

On the whole, this second element in buyers' tendencies is a factor of instability in markets, and in those markets which are fluctuating widely it will be found that sentiment is the handmaid of pure speculation. Thus it may be seen that probably the existence of the "buyer's will" factor reduces the basis for any optimism we may have concerning the possibility that market values may function effectively in equilibrating the underlying costs and utilities of the buyers and sellers.

Already, the phrase, "will to buy", has been used. If the foregoing analysis be correct, it seems that sentiment is probably a large part, if not the whole, of this element in the buyer's motivation. Some economists have long introduced the concept of will to buy as being a factor in demand, adding it to desire and purchasing power. Usually it will be found that (1) if the potential buyer has a desire for the good in question, and (2) if the said buyer has the purchasing power or means of making his desire effective, he will enter a bid, or otherwise become a part of the active force of demand. It must be admitted, however, that this result is not necessarily the case. An *act* is required, and most men can recall times when they have been willing and able to buy, but have actually not made the purchase, for lack of either a stimulus or an impulse.

Herein, no doubt, lies a large part of the significance of salesmanship and advertising. These are effective chiefly to the extent that they break down inhibitions or induce potential buyers to "buy now."

3. Buyer's Subjective Worth of Money ¹⁴

If money can be thought of as having marginal utility at all, the quality must be an indirect or instrumental one; accordingly it seems expedient to refer to the individual's reaction toward money as a subjective worth—a sort of intermediate subjective exchange value. According to the ordinarily accepted statement, this is the purchasing-power factor in demand.

The trouble with referring to demand as depending upon “desire backed by purchasing power”, lies in the fact that “purchasing power” is (1) an indefinite matter and (2) not coordinate with desire. A given quantity of money, for example, will have a different significance as purchasing power, depending upon the person in whose hands the money is. It is sometimes said that “money talks”, but that can be true only as money affects the potential buyer's tendency toward some good. In reality, the *money becomes effective as a force which can function along with desire only as we are able to consider it as having a subjective worth to a possessor*. Then its degree of importance functions along with the degree of importance which the commodity in question has for him.

It is here that we find the basis for a relationship between the particular good and all other goods in which the buyer may have any interest. The subjective worth of money to him depends upon the general exchangeability of the money. This in turn brings us to the concept of his “margin of consumption”.¹⁵ The individual's margin of consumption may be thought of as the obverse of the degree of importance which he attaches to a dollar. If his margin of consumption be low, money means little to him, while if the margin be high, he attaches great importance to the dollar. Clearly the thing is a measure of the individual's unsatisfied desires with respect to all the things that money can buy; that is, exchangeable goods. It is a general condition which embraces all the goods which come within the scope of his attention. Such being the case, the

¹⁴ For further and more detailed discussion, see below, Chapter VII on the value of money.

¹⁵ Cf. A. Marshall, *Principles of Economics*, Bk. III. Chap. III; Ely, *Outlines of Economics* (5th ed.) Chap. IX. See below, Chap. VIII.

margin of consumption, and with it the subjective worth of money, is affected by the standard of living and *real* income, and accordingly expresses various habits and customs, as well as the mere fact of differences in the amount of money income.

We may therefore say that subjective worth of money has two main aspects: (a) the amount of the individual buyer's money income, and the nature and shape of his income stream;¹⁶ (b) the desires for and scarcity of the currency in which the income is received.¹⁷ These are influenced by the quantity of money possessed, the credit rating of the subject as a borrower, the availability of his money as affected by the rate of flow of his income stream, and his certainty as to the *future* value of the money unit. The last item is influenced by movements in prices, and by the prospects of inflation or deflation.

4. Buyer's Judgment of Seller's Position and Attitude

In addition to the potential buyer's desire for the good in question, and his ability to pay for it, we often find his will-to-buy affected by some information he may have concerning the desire of the seller to sell or the seller's ability to hold. This may come through a knowledge of the seller's costs. Such information, or even estimates and guesses, may also affect the buyer's intensity of desire for an additional unit, or his marginal utility. Clearly, therefore, some allowance is to be made for the reaction of the buyer to the seller's tendencies or attitudes, or to his knowledge of the seller's "statistical position".

E. *Elements in Sellers' Offers, or "Supply Prices"*

Just as it is common enough to find demand described as consisting of desire to buy plus purchasing power, so one may think of supply as being desire *to sell* plus selling power. Surely a desire to sell is as real and as significant as a desire to buy. Surely the significance of the desire to sell depends upon the ability and willing-

¹⁶ See I. Fisher, *The Theory of Interest; Elementary Principles of Economics*, pp. 378-388.

¹⁷ For a more complete discussion of these and other factors in the value of money, see below, Chap. VIII.

ness of the would-be seller to consummate the sale, in much the same way that the effectiveness of demand depends upon the purchasing power of the buyer.

With this general understanding as to the significance of sellers' offers, therefore, it is well to consider in detail the elements which enter into their determination.

1. "Seller's Worth"

By this term is meant the tendency of the individual seller toward selling some object, insofar as that tendency is affected by his own appreciation of the good, *regardless of its cost*. This appreciation will, in turn, depend upon several conditions, each of which will throw light upon the general significance of the main concept. Thus we note first:

(1) The *marginal utility or subjective worth* of the good to the seller. Many a merchant, for example, finds himself at times regarding items in his own stock of wares from the standpoint of a consumer. This aspect of the seller's attitude toward the good doubtless finds expression not infrequently in his unwillingness to do what he may call "giving it away".

(2) *Subjective exchange value*, or the judgment on the seller's part that the good is possessed of some value, or as he may say, is "worth something"—somewhere, or to somebody. The seller in any real market, as he comes in contact with potential buyers, is bound to sense the existence of desires or marginal utilities with reference to his goods. He may also observe that other sellers are getting something for the same objects which he seeks to dispose of. In the last analysis, too, there is often a factor of "scrap value" to be considered. Thus there arises in the seller's mind an imputation of worth, which is fairly characterized as a subjective exchange value.

(3) "*Opportunity cost*", so-called, enters into the seller's attitude toward his wares in connection with this general head of "seller's worth". By opportunity cost,¹⁸ we here mean, not real cost, but an imputation of worth to an object, based upon the utility or gain which a seller thinks he might have secured by adopting some course

¹⁸ For full discussion, see pp. 23f., 25, 11., 264ff.

alternative to the one which led him to his present position as a would-be seller of the good in question. Thus his selling tendency is conditioned by an experience with alternatives. For example, the holder of an article for sale may have the idea that he could at one time have sold his good at a price above that which buyers now bid. (This is often the case in the stock market.) The manufacturer of a product may figure that he could have secured a higher price for the raw materials which he is using than the amount which he actually paid for them, and this may lead him to hold for a higher price. In short, he may be led to maintain or raise his offering price by charging his raw materials at some assumed market price instead of at the actual expense which he incurred for them. Again, he may set up a charge for interest on investment which represents the feeling on his part that if he had actually put his money into some other use, he might have made the return which he now enters as a "cost". The point is that a seller's imputation of an opportunity cost merely influences his particular offer or supply price, and that this influence is exerted by affecting his subjective appraisal of the worth of the object in question.

2. Disutility Cost and Expense Cost

For reasons which will be stated presently, the concepts of "cost" and "expense" are to be kept separate, but are to be treated as interrelated.¹⁹ It is taken for granted that the reader is sufficiently familiar with economic terminology to know the difference in the use of the two terms. It may be helpful, however, to suggest that another way of indicating the difference between the two would be to call the one *disutility cost*, and the other *expense cost*.

The significant fact about these items, whether considered separately or jointly, is that *they affect the seller's tendencies and reactions, either by causing pressure to sell, or by inducing a resistance to selling*. In short, cost and expense work both positively and negatively in influencing sellers' offers. The fact that either cost or expense (or both) has been undergone or incurred, conditions the seller's tendency to sell. It motivates him to recoup or cover his

¹⁹ Cf. above, pp. 24, 147.

outlay of trouble, time, or money. In some cases, one may say that it leads him to desire a reward, compensation, or remuneration. On the other hand, however, the same fact may lead him to refuse to sell below his "cost", and certainly it induces resistance or aversion on his part to an acceptance of bids which he considers to be less than cost and expense.

Thus cost may affect the determination of value in several ways. The producer-seller's tendency may be affected by cost, either as past cost, present cost, or anticipated future cost: ²⁰ he may be less unwilling to sell somewhat below current cost if he feels sure that unit costs will be less in the near future. Buyers' bids may be affected by estimates as to what it would cost them to produce the good, or by mere information of the producer-seller's costs. Both sellers and buyers, but more directly the former, are influenced by costs as related to bids or demand prices; since the spread between the two often affects the quantity of the good available, and thus, indirectly, the value.

(1) By *disutility cost* as affecting objective value, we mean the seller's own negative desires and aversions to selling at prices that he does not regard as desirable. This may be determined by many conditions, among which are often the disagreeable aspects of labor, abstaining from consumption, and undergoing risks and uncertainties. So much misunderstanding has developed in connection with the idea of costs and the part they play in the determination of economic value that it seems desirable to pause here in order to give a more complete explanation.²¹

It has already been noted that when the individual, the "subject", runs into difficulties in acting on the basis of a "want", he realizes

²⁰ This, however, would be an estimate partly determined by past and current costs.

²¹ See E. Cannan, *A Review of Economic Theory*, (1929), Chaps. IV, VII; A. C. Whittaker, *A History and Criticism of the Labor Theory of Value* (1904); H. J. Davenport, *Value and Distribution*, Chap. I; "Cost and Its Significance", *Amer. Econ. Review*, Vol. I, pp. 724-54; J. Viner, "Cost" in *Encyc. of Soc. Sci.*; L. H. Haney, "Cost of Production Statistics", *Quarterly Publications of Amer. Statist. Assoc.*, June 1920; A. C. Pigou, *Economics of Welfare* (3rd edit., 1929); J. A. Hobson, *Work and Wealth* (1914); N. W. Senior, *Political Economy*, pp. 97ff.; Pantaleoni, *Pure Economics*, pp. 7f., 101, 170f., 185f.; J. E. Cairnes, *Leading Principles*.

the conditions which separate him from some object, and that his state of mind is then transformed into a "desire". His perception of the conditions which interfere with the gratification of his want, and which tend to separate him from the object in question, involves feelings in the nature of costs—that is, costs in the sense of subjective, psychic, or real costs.²²

Again, we have seen that there are negative desires as well as positive desires, and that these negative desires are opposed to positive desires, thus interfering with or limiting activity which is motivated by such desires. In their more active form, the negative desires become "aversions". These are not to be confused with feelings of dissatisfaction or pains. Such feelings may be remembered from past experience and may enter into motivation where reflective choices are involved; but the original motivation in the shape of costs comes from the negative desire. Such costs we have called disutility costs. It has been seen how, when opposed to marginal utilities, they give rise to a state of mind which we call a "subjective worth".²³

With this background, there is now need of a somewhat amplified analysis of the concept of cost. This is true, partly because of the part that this concept has played in the history of economic thought, and partly because other problems arise which involve the functioning of cost in society and in markets, where it must play a part in the determination of objective value. To begin with, it seems that we may clear the ground to the extent of formulating certain indisputable facts which are generally recognized:

All agree that there are "costs" in some sense, and that they are important in that they are a factor in most human choices, making utility a *net* quantity.

All agree that "expenses", or expense costs as they are here designated, are prices, or sums depending upon prices; and that if they are used in theory to explain directly the determination of other prices, a circularity of reasoning is involved.²⁴

²² See above, pages 164, 167, 170f., 185. in discussion of the genesis of value.

²³ See above, p. 171

²⁴ But see Montoe's reasoning, below, p. 255.

All agree that subjective or psychic costs are intangible and no more measurable than are utilities. Neither are they comparable as among different individuals. (The author would add that neither are they any less measurable or comparable than utilities!)

All agree that subjective or psychic costs, if intangible, are none the less real and important. In some way, they actually exist and manifest themselves in the form of resistances to desire gratification, *incidentally* occasioning dissatisfactions which are opposed to feelings of gratification. In some way and to some extent, it is generally agreed that subjective costs lie back of expenses. They are generally recognized as being one of the ultimate or primary factors in economic life.

Despite these agreements, however, the problems and differences of opinion are numerous. First, some consider that the difficulties involved in attempting to introduce disutility costs into economic analysis, are too great. They therefore seek an escape by assuming that goods already exist, taking their scarcity—and value—for granted in much the same way that the old Classical economists took utility for granted. These are the “price economists”. Others ask, how can disutility costs work as a “force”? Are they, after all, the cause or are they the result of choices? Those who hold that costs are the *result* of choices are the ones who adopt the opportunity-cost doctrine.²⁵ Then there is the question, How can we measure costs? How can they be combined with desires in the de-

²⁵ E.g., see Monroe, *Value and Income*, p. 9. Monroe distinguishes “satisfaction cost”, caused by forgoing the uses of time and energy in consumption or desirable activity when we engage in production; “efficiency cost”, caused by forgoing increases in productive capacity when we use our resources in some particular way; and “consumption cost”, caused by forgoing one act of consumption for another. The first apparently involves such “pain cost” as labor. The second seems to involve “saving”. The third is pure “opportunity cost”, or alternative utility forgone. Obviously, however, the first and second can be reduced to terms of utility forgone, or what Monroe calls “consumption cost”; since both uses of time and energy, and production, may be considered as resulting in consumer goods. But when considering “consumption cost”, Monroe says that it depends not only upon consumption sacrificed, but also upon the resources required to produce the good in question; and that this involves technology. “This is not a matter of opinion or feeling, but of hard technical fact. . . . There are objective factors in every cost. The concept is meaningless without them.” This admission seems to destroy his fine-spun scheme of opportunity cost.

termination of a value? What should we do with expenses—can their interrelation with costs be assumed?

In answer to these various questions, it is the author's opinion, first, that the economist cannot escape the problem of cost. To leave cost out of the economic picture, would involve a degree of abstraction which is too heroic—which, in fact, would make economic assumptions run counter to fact.²⁶ The very nature of an economy and of economic life, requires that attention be given to the balance between desires and aversions, and gains and losses. Costs have to be sanctioned by utilities, just as utilities are limited by costs. Unless costs be counted, and a tendency so to act that they will be covered be assumed, we are as likely as not to find waste and misdirection of effort, in the sense of reduced income, however measured.

More than that, we can not count upon the maintenance of any given quantity of goods, or the maintenance of the efficiency of any stock of the instruments of production. Costs must and do include negative desires with reference to labor to provide the subsistence for labor, and saving to provide the replacement of capital goods. No perpetual stream of "services" can possibly be assumed, unless we first explain why men desire so to act that labor and capital—to say nothing of other agents of production—tend to be maintained and replaced. Even the desire to live is a desire for subsistence plus other things that are considered to be involved in living, and subsistence may be no easier to attain than luxury.

In confronting the problems, other than the existence of goods, it becomes desirable to consider very briefly what is known about the nature of subjective cost. To begin with, it will be assumed that the physical environment is real, and that one aspect of it is the limitations which it imposes upon a man who is acting on a desire tendency, and thereby tending to gratify a want. These limitations may be variously described, but perhaps the old metaphysical categories of space and time will be of the most practical importance, if we can include as a condition associated with the concept of space, the form in which matter is found. These limitations are partly found in the individual's organism, such as limited energy,

²⁶ See above, pp. 24 and 39 in the introductory chapter.

intelligence, and the like. Partly we seem to find them outside man in the conditions of "natural scarcity", remoteness, indivisibility, and other attributes of matter or different objects, as these have been indicated in the discussion of so-called fitness values.²⁷

Again, we may think of subjective costs, or all costs, as outgo or payment for goods of all kinds. For example, if one pays the price of labor for a nicely-mown lawn, labor is the cost. This concept opposes cost to income, from which costs are a deduction. It arises in connection with the processes of production, an approach which is most readily grasped by the business man. At the same time, it leads us to note that the concept of cost may be essential to an understanding of economic equilibrium in the sense of a balance between income and outgo.

There are two practical aspects of cost. It may be regarded as a deduction from gross income, thus giving us the concept of net income. Or it may be regarded as a "force" which limits or counteracts the possibility of acting upon or gratifying positive desires. Looked at this way, it is an essential part of the motivation of economic activity, whether the individual be conscious of it or not. It is this second aspect of cost that is to be stressed here.

Desires in the positive sense, as has been seen, point to and are focussed upon some "good" or "goods". But, as has also been pointed out on another page, there are negative desires, so called because they point *away* from the good. They are desires *not* to do the things which enable the individual to make or acquire any scarce good. Thus they may be directly and specifically concerned with some means or instrument of production.

At this point, it is especially important to remember that the discussion here is not concerned with so-called "pain cost", meaning unpleasant feelings associated with productive activity, such as the fatigue that a laborer may feel. Such pain costs are, no doubt, real and important. They are not, however, adequate to explain the motivation of economic activity, unless it be in some unreal hedonistic world which is dominated by the felicific calculus. We are dealing here with desire in the same sense that we deal with desire

²⁷ See above, pp. 183ff.

when we discuss utility. Just as disutility stands opposed to utility, so negative desire stands opposed to positive desire. Thus we may understand that cost, in the sense of negative desire, operates as a "force" which resists positive desire tendencies. As such a "force", it is commensurate with desire. Marginal cost in this sense is as available for scientific analysis as is marginal utility.

There are three main occasions of cost: the nature of the living organism, its relation to its physical environment, and its relation to other living organisms in society.

The individual as a living organism goes through an endless series of changes, one aspect of which has already been dealt with under the head of organic wants. Incidentally, the desire for activity or exercise seems to be generally accepted as a reality by those who are expert in such matters; but activity stands opposed to rest, and lack-of-rest means fatigue. Thus if we say that an individual desires activity, we must at the same time admit that he desires rest. As he exercises, the desire-for-exercise diminishes, and the desire-for-rest grows. We may describe the desire for rest, in one of its aspects, as being aversion to fatigue.

In his relation to his physical environment, man finds it necessary to labor, a phase of activity which will be defined and discussed later on. But labor is opposed to leisure, and beyond a certain point, becomes irksome. Thus we may say that as the desire-for-labor declines, the desire-for-leisure grows, and the process involves an increase in the irksomeness of labor. Similarly, in his adjustment to his physical environment, man develops instruments which facilitate his labor. These involve abstinence, which is opposed to spending or consumption. Thus as the individual saves (and "invests" his savings in some instrument of production), his desire for such instruments and for such savings diminishes, while his desire-for-spending or for consumption increases, and we say that the cost of saving, waiting, or abstinence exists.

The cases of cost which are associated with the individual's relation to other living organisms, take the economist into fields which may be shared by other social scientists. It seems reasonable and expedient, however, to mention the following. Most men usually

desire distinction, or show the love of display. This desire stands opposed to a desire for retirement. As one's distinction through outstanding display grows, one's desire for it diminishes, while one's desire for retirement increases. The lack of peace and privacy may be regarded as a cost. Similarly, if individuals desire authority, they find an opposing desire for irresponsibility, and the cost may be expressed as the worry that comes with growing responsibility.

Finally, there is the mixed situation which involves interrelations among individuals and their environment. In this connection, it seems that one may distinguish a desire for adventure. This stands opposed to a desire for safety and certainty. As the desire for adventure is gratified, the desire for safety and certainty grows. We ordinarily think of risks and uncertainties as being the costs that are involved, associating them directly with the negative desire for safety and certainty.

In this way, the analysis might be developed to include disesteem, the sense of inferiority, and the lack of self-expression, or inhibited instincts, to mention some of the more obvious cases. Even the consciousness on the part of the members of a society that their limited natural resources are being exhausted might come to play a part, as a desire not to exhaust those resources so rapidly,—related to a desire for more general or prolonged security—and thus enter the motivation of human activity as a cost.

It is not the aim here, however, to exhaust the subject of cost. The aim is merely to present an analysis sufficient to make the nature of the concept clear and to enable the reader to understand how it can play a part coordinate with positive desires and utilities in motivating men's action. The position here taken is that subjective costs are logically separate from utilities, and that they are as definite and quantitative a sort of desire-tendency as are positive desires and utilities. We do not have to measure subjective costs in any way other than we take to measure desires. We do not have to measure disutility costs any more than we have to measure utility. Economics merely shows how *the individual measures them by his choices, or, as we sometimes say, in his own "mind"*. Consciously or unconsciously, such measurements he certainly makes. Anyone who

realizes, as most economists seem to do, that an individual's act in going to a store and buying candy, in some way measures his desire for candy, must also recognize that his going to a store which is nearby as against one which is further away gives some basis for measuring not only his positive desire for candy, but also his negative desire for rest, saving, or for *not* doing whatever may be required to establish the desired contact between himself and the candy.

Costs, it is important to observe, can include only those negative desire-tendencies which are effective in motivating *individuals*. They must concern things which are capable of perception by an individual, and which are or may be felt definitely as being important in relation to some desire. This is a significant point, because we are prone to consider all things which from any standpoint are undesirable as being costs. For example, J. A. Hobson in the work to which a reference is given in the bibliography to this section, would have us include the impairment of aesthetic standards as a cost, along with many other undesirable things. In such cases, however, we get no motivation to individual action with reference to scarce objects as means of gratifying desires.

In the second place, the term costs in economics should be confined to cases in which the negative desires involved are definitely associated with the processes of *production*, and are a part thereof. The importance of this observation is illustrated by the attempts of another economist, A. C. Pigou, to include among costs such things as the damages done to a neighbor's health or property by smoke, fumes, and similar conditions.

Unless the neighbor suffers damages which can be sued for and recovered at law, it is difficult to see how this sort of case, important as it is, can function as an economic cost. When the factory whose belching smokestack has emitted sufficient noxious gases to cause destruction to life, health, or property in the surrounding neighborhood, has to pay damages, the processes of production are obviously interfered with temporarily and in a special way. To this extent, the economist may feel called upon to take them into his consideration. Even here, however, one reflects that "in the long

run" such an expense would be regarded by most business men as the result of a mistake which might have been avoided by prudence or good legal advice. Thus it would not be what we may call a normal expense or cost.

In sum, the author restricts the analysis of cost to those cases in which there eventuates a subjective value which is expressed as a subjective price, and which may be objectified as a bid or offer. The aim is to show how desires, both negative and positive, operate as "forces". The scope of economics is thus narrowed or limited to cases in which *objective measurement of results is possible*; but at the same time, it is expanded through the inclusion of the realm of subjective values.

In motivating sellers, as such—frequently they are producers in the capacity of selling their own products,—costs are in large part history, or based on history. Insofar as the good for sale is concerned, the seller usually sees costs in retrospect²⁸; while the buyer sees utility in prospect, insofar as the good he desires to purchase is concerned. Thus it is that negative desires or feelings of undesirability, whether associated with pain or not, affect the tendency of the seller, as opposed to those of the producer. (Even if the seller be the one who completely produced the finished good, two different sets of attitudes are involved.) The seller, as such, generally knows a good deal about the complete "cost" of the goods to him. From his practical standpoint, he considers that he paid for them not only so much money, but also, perhaps, the irksomeness of labor and managerial activity which he may have undergone in making or acquiring the objects which he has for sale; also any sacrifice he has made in the shape of saving and waiting. In addition, it may be that he has used up some material instruments which he had gone to trouble or "risk" to acquire, and this "depreciation" will enter into his appraisal of the situation. Finally, he will doubtless be influenced by the worries and hazards that he has undergone, if such be the case, and will be loath to sell at

²⁸ He may also be influenced by anticipated future costs; as, for example, by anticipated reductions in "overhead" due to increased volume. (Cf. pp. 308, 325f., 372.) This would be the more probable in case of contracts for future delivery.

any price which does not make them seem to have been worth while.

Obviously, all this sort of calculus is strictly individual and purely subjective. It is the individual seller's idea about what the salable object has "cost" him, and it is usually significant as leading him to resist any tendency to sell at a price which would be lower than what he considers to be compensatory or remunerative.

It is of interest to the economist to note that in accountancy it has been a common practice to give some recognition to the existence of these costs proper, or disutility costs, by setting up certain "charges". These charges do not represent actual out-of-pocket expenses, but they are justified, where used, on the ground that they do represent real sacrifices made by the enterpriser. Such charges are those for "executive salaries", "interest on own investment", and "rent on property owned". (So-called "excutive salaries" usually represent a distribution of profits to the proprietor.) These are sometimes referred to by economists as representing imputed profits, imputed interest, imputed rent, etc. In this case, however, the process of imputation is based upon a recognition of costs undergone by the proprietor, either as enterpriser, manager, or owner of capital and land.²⁹ The seller "imputes" to his own disutility costs a price which he is apt to estimate on the basis of what he pays others for undergoing what appear to be similar costs, making allowances for technical efficiency.

(2) *Expense proper, or what may be called "expense cost", represents the money outlay made by an enterpriser for commodities or services used, or intended to be used, in the process of production.* Expenses, in this sense, fall chiefly under the following heads³⁰: materials and supplies, payroll (wages), interest paid, rent paid, administrative expenses, insurance, taxes, and accrued depreciation.

Thus expenses, in reality and ultimately, are necessary because of the disutility costs or negative desires of others, the others being

²⁹ In the case of the capital and land, the cost will almost necessarily be figured in terms of so-called opportunity cost.

³⁰ Sec L. H. Haney, "Cost of Production Statistics", *Quart. Pubs. of Amer. Statist. Assoc.*, June, 1920.

those who supply the goods and services used by the enterpriser who buys them for sale, with or without manufacture. Expenses may thus be thought of as making "costs" directly effective, since they immediately influence the sellers' estimates of the products held for sale, and thus through offers enter into the determination of objective values.

Here we come to another manifestation of the place of so-called opportunity-costs. The seller has "tied up his money" in certain goods which he has purchased, either to sell directly or to process and sell. In thus tying up his money, if he has any alternative, he assumes that he could have got something else of value if he had put it elsewhere. Thus he may be acutely conscious of a choice he made among alternatives, and, as an individual, he may become affected by the opportunity-cost complex. This, however, is no definite basis for a valuation, and in reality merely takes us back to the phase of seller's worth judgment which has already been discussed under that head. (Moreover, as will be shown, it rests upon the assumption of prices which it is the economist's problem to explain.)

The point which the author would stress is that "*expenses*", like "*costs*", are significant as affecting the seller's desire to sell—his attitude toward selling; but that expenses, as distinguished from costs, have their effect through the seller's desires for goods other than the one he desires to sell. These other desires are usually represented by the "subjective worth" of money to the seller. The seller's desire to sell the good he offers, insofar as affected directly by his aversion to labor, save, etc., pertains to that good, which, so to speak, embodies his efforts as a producer. But when he incurs "expense", (1) he may be assumed to know something of the wide range of easily available alternatives for applying his money, including consumption; while at the same time (2) he generally cannot specifically allocate any disutility-cost experienced by himself in acquiring the money that is involved in a particular unit of "expense". As a seller's expenses increase, however, there is a tendency for his subjective worth of money to increase,⁸¹ which

⁸¹ Of course, his subjective value of the product might also increase.

in turn may lead to price-cutting in order to enable him to obtain more money, or a given amount of money more quickly. Anyone familiar with business will recall numerous instances in which the business man's need of "cash" has been the predominating factor in determining his policy.

The important thing in the determination of economic values, on the supply side, is the seller's tendency toward selling, and at this point, we stress that part of the seller's attitude which pertains to his expenditure of money, or "expense cost". This attitude is his subjective worth of money. Expense, as a sum of money, is objectively measured: it is five cents a pound or five dollars a ton, etc. The seller's attitude toward this expenditure—the way expenses affect his selling tendencies—however, is another matter; and while this unfortunately makes the most significant measurement more difficult, it in a way simplifies our problem, since it shows how disutility-cost and expense-cost are coordinate and may be combined.

It will be observed that the procedure here adopted amounts to "deflating" expenses by considering them as related to disutility costs. The more usual practice among economists has been to "inflate" disutility costs by a process of "imputation." Following accounting technique, they impute a money price to managerial labor and use of proprietor's own land or capital. This practice, however, involves great theoretical dangers, and tends away from fundamental analysis of economic motivation. It unduly emphasizes so-called opportunity costs and the assumption of prices before price determination.

(3) "*Opportunity Costs*" Not Fundamental.³² So considerable has been the influence of certain economists who have accepted the individual point of view, and have based thereon a theory of "op-

³² On "opportunity cost", see H. J. Davenport, "The Formula of Sacrifice", *Jr. Pol. Econ.* II, 561-73 (1894). *The Economics of Enterprise* (1913), Chaps. 6 and 8; D. I. Green, "Pain Cost and Opportunity Cost", *Q.J.E.*, VIII, pp. 218-229 (1894); R. T. Bye, "The Nature and Fundamental Elements of Costs", *Q.J.E.*, XLII, pp. 30-62 (1926); L. H. Haney, "Opportunity Cost", *Amer. Econ. Rev.*, II, pp. 590-600 (1912), and *History of Economic Thought* (3d ed.), pp. 583-6, 729, 733; H. D. Henderson, *Supply and Demand*.

portunity costs", that it seems well to pause here for a brief discussion of the matter. It is stated, for example, that when a farmer may raise both peanuts and cotton, but actually raises cotton only, he may figure what he might have made by raising peanuts as an opportunity forgone, and charge that amount as a "cost" against his cotton.³³ Other manifestations of the idea appear in the case of those who would figure "imputed" interest on the enterpriser's own investment in his business as a cost, on the ground that he might have received some interest if he had used his capital in some other way.³⁴ Again, cases exist in which business men argue that they should be allowed to charge raw materials into their operating expenses at some market price in excess of what was actually paid by them for the materials in question. In this case, again, the argument is that the business man in question has the opportunity of selling the raw materials at the alleged market price, and that he therefore undergoes a forgoing.³⁵

In general comment, we note first that in no case are these so-called opportunities "costs" in any sense of pains, disutilities, or aversions acting as resistances to production. They do not even represent expenditures actually made.

More important in this case, is the fact that such "opportunity costs" do not exist in advance of the values of prices which they are supposed to help determine. Thus the alternative as between cotton and peanuts can be figured only by a process of balancing the two crops on the basis of assumed prices. In short, the opportunity is a *price-determined opportunity*. The alternatives depend upon prices which exist in the two fields. The decision is a result of prices, and cannot be a cause.

As a matter of fact, entrepreneur opportunity cost is really a question of profit. The farmer who chooses between cotton or peanuts is balancing two prices against two expenses (also prices). He figures the price of cotton and deducts the expense cost of

³³ See R. T. Bye, *Principles of Economics*, p. 308.

³⁴ See *Amer. Econ. Rev.*, IX (1919), 41ff., a discussion on "Interest on Investment as a Factor in Manufacturing Cost", by C. H. Schovell and L. H. Haney.

³⁵ An attempt to generalize all such cases is found in Monroe, *Value and Income*, p. 9f. See above, p. 255n., where Monroe's analysis is stated and criticized.

producing cotton. He does the same for peanuts. Then on the basis of an estimate he decides which is the more profitable.

When the cotton goes down in price, the alternative of raising peanuts comes into play. The supply of cotton may then be shut off, and the tendency of cotton prices to decline may be lessened. It should be noted, however, that these developments do not occur until *after* the price of cotton has fallen. Moreover, the effectiveness of the peanut alternative depends upon the assumption of an existing price for peanuts, and a comparison of the sales at that price with the expenses (also prices) that will be required to produce the peanuts.

Those who argue for the importance of so-called opportunity costs go on and reason that as the opportunity to raise peanuts is resorted to, and the peanut output grows, the price of peanuts will be reduced. Then the peanut alternative goes out of play, and the cotton opportunity becomes effective again. But why? Obviously we again find that it is only the *result of price changes*, and is effective only through calculations based on assumed prices.

The complete circularity of the notion that prices mutually determine one another is clearly seen when the question of divergent movements among prices arises. If one price determines another, how can the two prices move apart or even in opposite directions? And if there be no adequate answer to this question, how does the matter become any simpler when thousands of interrelated prices are confronted? In fact, price-determined opportunity cost breaks down because it cannot explain differences: its validity depends upon the *assumption* that alternatives (called "opportunities"!) present themselves to individuals in the shape of choices among homogeneous instruments of production existing in identical combinations. This assumption not only begs the question, but is contrary to fact.

It seems that if we are to postulate a *system* of prices, we must also postulate tendencies or "forces" that maintain that system; otherwise centrifugal forces may disrupt it. The opportunity-cost concept can help to explain the process by which price uniformities are attained, and the tendency of prices to vary with real costs; it

is helpless as an explanation of the reason *why* divergencies exist, or *why* uniformities tend to prevail. Like any "system" of variables, a price system must have reference to equilibrium. The "price system" is a system, because prices themselves are determined by inter-related desires (positive and negative) and scarcities. The system lies in the primary forces, or causes.

In the last analysis, it becomes logically necessary for the opportunity-cost thinker to abandon the attempt to deal with the cause and determination of value. It will be found that he proceeds to assume that goods have value, and therefore he must assume the conditions of scarcity and desire. Thus he is driven to confine his thought to the narrow field of the so-called "price economics" as analyzed in the introductory chapter. And, finding no starting point in causal forces, or stopping point in equilibrium among opposing forces, he is driven toward schemes of "social control". He dallies with the idea of solving his equations of exchange by fiat, trusting to the state to give money a value.

The changing alternatives or "opportunities" merely measure or reflect changing demands and disutility costs, which latter are usually the most important factor in determining prices from the supply side. Our final conclusion is that the *"opportunity cost" is the individual's way of summing up the relative advantages of two possible courses of action which are offered to him as a result of price-determined conditions.* It is just the process by which individuals arrange their subjective values, *after* real costs and desires have functioned.

It is apparent that the opportunity in such cases exists from the individual point of view only, and *cannot be generalized.* Characteristically, the individual business man takes prices for granted,—or fixes them arbitrarily if he has the power to do so. From the social point of view, however, he has no alternative, and the scientific economist sees individuals as being subject to "law". If more money is to be made by the farmer in raising cotton than peanuts, his action is determined by his attitude toward that fact. If everybody acts in this way, the opportunity ceases to exist, for the simple reason that its attractiveness as an alternative depends upon the

assumption of a surplus profit. If everyone takes the same course, this competition eliminates the surplus profit.

Certainly it is impossible from any social point of view to add so-called opportunity costs to disutility costs to get a total for the society.³⁶

It is utterly impossible to sum up prices in the form of money expenses with the idea that in this way we can cover all costs in a society. (1) Some production is carried on without any payments for goods or services, the producer being also the consumer. (2) Expenses do not include certain important items of disutility cost, such as labor of management, or the cost of using property owned by the enterpriser himself. (3) Much duplication would exist in any total of "expenses", largely because of the pyramiding of the payments for semi-finished materials used in successive stages of production. Moreover, expenses, as prices paid for factor services, involve the logical weakness of assuming the value of whatever is used as money. Finally, there are many expenses that cannot be allocated to particular products ("joint expenses").

The upshot of the matter is that we cannot arrive at the full truth, either by relying solely upon expense costs (supplemented by "imputations" of expenses to inflate disutility costs that are not directly paid for), or by relying solely upon disutility costs (supplemented by deflating expense costs that have uncertain or indefinite relations to disutility costs). The way to truth seems to be to keep disutility costs and expense costs distinct in thought, but to recognize the interrelation between them. Then we can combine them in the sense of treating them as joint forces in affecting sellers' attitudes toward selling.

(4) *No Circularity of Reasoning Required.* One of the most puzzling aspects of economic analysis comes up at this point, and it is probable that the vogue of the opportunity-cost approach has been

³⁶ The error of such a process of addition may be illustrated by the condition which arose in 1930-31 when bearish sentiment was so pronounced in the financial world. This was largely the result of opportunity costs called "paper losses" (or at least, greatly reduced paper profits), for holders of securities of various sorts had not yet completely liquidated. What the real loss was to be, however, if any, could only be known when the real liquidation had occurred.

one result. We find that expense costs involve the prices paid for goods and services other than the particular good or service the value of which we may be attempting to explain. It thus seems that in attempting to explain any particular value we find it necessary to assume the existence of other values, and that we therefore reason in a circle. But a social scientist can hardly take "expenses" for granted, and attempt to explain prices thereby. Such a procedure would be a perfect manifestation of the entrepreneur or business point of view.

Nor is it sufficient to argue that *at any given time* the expenses incurred (that is, the prices paid) by an individual seller constitute a line of definite resistance on his part. It is true that the fact that the individual seller actually pays certain wages, or makes other expenditures, may influence him; but the question remains, Why were these payments what they were? What determined the amount of the expenses? How can we explain the quantity of goods that producers have made available? In short, what makes the so-called opportunities?

Short-run forces and temporary conditions are none-the-less forces and conditions which operate as "causes", and as such must be regarded as existing prior to values and prices. They operate along with long-run forces. Even in case prices are being "fixed" by authority, if the attempt be made to allow for all elements in the problem, the price-fixer must consider all causal "forces", both long-run and short-run. And he would allow expenses (prices paid) only as they represent the primary costs and were therefore necessary and "reasonable"(!).

The fundamental answer, therefore, must be found in the long-run tendency toward equilibrium. The author agrees with those who assume that the desire disposition of most men is such that the prices they will pay tend to reduce to a general equilibrium which reflects a balance between (1) individual desires and (2) the supply limitations affecting the things desired. In the final analysis, these supply limitations are found to be (a) disutility costs, in the sense of negative desires and aversions of producers toward the activities required in production, and (b) natural scarcities of

human capacities and quantities of material objects. In other words, there is a fundamental presumption that, as motivated by positive and negative desires, men tend to do what they consider to be worth while, and that this leads to a balance between consumption and production which involves a balance between positive and negative desires, or utility cost.³⁷ On this assumption, "expenses" are related to "costs".³⁸

In this line of reasoning, lies the significance of Adam Smith's statement that labor was the first or original price paid by man for goods. As usual, certain fundamental truths of social science appear most clearly when we consider the individual as producing for his own use. In such a case, the fatigue and irksomeness of the labor involved is analogous to the wage expense which, in a more complicated economy, the employer would pay in order to induce a laborer to work. To repeat, in both these cases the logical presumption is that there is necessarily a tendency for expenses and costs to vary in the same direction.

In fact, prices of all sorts represent a *system* of values. The prices paid by producers, which are "expenses", have to do with the subjective exchange value of money to them. The latter in turn is the worth that money has to the producer, as determined by some

³⁷ Cf. above, p. 63f.

³⁸ Monroe in his *Value and Income* (pp. 29f.) undertakes to escape the circularity of price-determined "opportunity costs" by "retracing" his steps and getting back to the "primary" schedules or want scales, which suggests a position similar to the one I take. But he does not follow through, because he confuses subjective and objective prices. He does not bridge the gap between subjective and objective values. He explains how an individual reduces his bids for a series of units of one commodity as the quantity increases, and also for some other commodity. He assumes that from these different "primary" scales of bids, combined with the scales of other individuals, are derived secondary "market schedules" for the two commodities. These secondary schedules are in terms of quantities taken at different prices. Finally he says, "Hence (sic) the *prices* [my italics] of the two goods are not based upon each other, but are simultaneously determined from the relevant data." But clearly, he has no "prices" in any objective sense. The so-called "market schedules" are not really quantities bought at a price, and determined by prices, until after exchanges have occurred and objective values and prices been determined. Schedules in terms of what quantity an individual is willing to buy at any given price, are but subjective, and merely invert the schedules of what the individual is willing to pay for any given quantity. As long as we try to attach causal significance to price-determined opportunities, we are fatally caught in the illogical circle.

process of imputation which involves a relation to all other values with which he is concerned.

The seller tends to impute to his own disutility costs, a price, or money equivalent similar to what he pays, has paid, would pay, or sees being paid to others, for undergoing similar costs, making allowance, according to his judgment, for differences in technical efficiency. On the other hand, the seller also tends to estimate what money income he could have got by using his own services, funds, or property in other lines, in this case often basing his estimate upon a judgment of the results which he believes that others have attained. Even in the case of labor, it is the author's observation that economics may now assume a tendency to demand and secure such money wages and working conditions as will seem to laborers to make their disutility costs worth while,³⁹ within the limits of possibilities allowed by production and sales. And should the limit be exceeded, a return to equilibrium will result from higher prices, unemployment, lower standards of living—one or all.

Thus prices do mutually affect one another to the extent that they influence individual sellers' attitudes or buyers' attitudes. This they may do through processes of substitution. In the case of the seller, there is the possibility of substituting one productive agent for another, as labor for machinery, and this process of substitution leads to the establishment of a general "margin of production", which involves a sort of equilibrium of all sellers. (This process of substitution among the agents or instruments of production involves the whole problem of "Distribution".)

On the other hand, the buyers' attitudes are affected through processes of substitution of one consumers' good for another—of course, assuming that the buyer is an "ultimate consumer"—and this leads to an interrelation among buyers at the so-called "margin of consumption". Here we find the problem of the standard of living. Here, too, we find the problems that involve competition for the "consumer's dollar".

In the last analysis, the fundamental question seems to be this:

³⁹ A result of labor organization, collective bargaining, and political power of labor.

Is it not necessary that we accept the conclusion that minima are set by aversions to the expenditure of human energy, the savings, the waitings, and the risk-takings and all the negative desires which are the real costs of production, and by the necessity of subsistence and replacement operations which are required to maintain the organisms and mechanisms which function in production? Such is the technological point of view. To be sure, this thought does not warrant the conclusion that these minima are also maxima; or in other words, it does not follow that costs and expenses are equal quantities. If, however, we assume freedom of individual action, and particularly if we assume the tendency of population to increase, the equilibrium tendency just referred to seems to follow.

One result is that we strengthen the reasons for holding that subjective costs may be considered to be reflected as "expenses". This is true, because the analysis shows how those conditions which cause divergence between disutility costs and expense costs, may be eliminated. The chief ones of these conditions are: (1) Joint costs, (2) costs which are not part of the processes of production, and (3) costs which are not felt by individuals, or which do not serve to motivate individuals. In fact, the social reformer could do worse than to start his approach to the problems of reform by seeking to deal with the problem of "fair values" for those goods which are produced at joint cost, and by devising rules and regulations that would control those costs which are not felt by individuals as deterrents to productive and profitable activities.

(5) *Marginal "Costs" and "Expenses"*. Since the work of Alfred Marshall, it is hardly necessary to do more than point out that *marginal* disutility costs or *marginal* expense costs are the ones that count in the long run.⁴⁰ These are the highest unit costs or expenses which producers of a given good still find it worth their while to incur, although there may be some doubt in their minds concerning the matter. Such marginal costs or expenses per unit may be thought of as the average costs of a marginal business enterprise, one which just pays. Or they may be generalized by competi-

⁴⁰ Cf. e.g., Marshall, *Principles of Economics*, Bk. IV, Chaps. I and III; Bk. V, Chap. IV; and Bk. V, Chap. III, § 4.

tion, working through substitution, and be thought of as the marginal unit of cost and expense incurred by all or nearly all business enterprisers, at "the margin of production" in the given industry. These two concepts of the margin may be synthesized by referring to the marginal unit of cost of the marginal business enterprise. Briefly stated, the idea is that as production increases, there comes in most industries a time when less effective operations result. Then the costs per unit of product tend to become greater. Thus, eventually, either less efficient business units come into existence, or less efficient production is carried on by the existing business units,—or both of these developments occur. If we assume anything approaching rational action on the part of business enterprisers, we may assume a *tendency* toward an equilibrium in this respect, which works toward the establishment of one "margin of production" for all the business units in a given industry.

In coordinating cost and expense, it may be said that the "opportunity cost" imputation, which has now been discussed sufficiently, serves as a "bridge" between disutility costs and expense costs. Through individual subjective valuations, it serves to keep the two interrelated.

This supplies the basis for a tendency to coordinate costs and expenses, upon which may be established a broad concept of "social cost". This "social cost" includes so-called imputed costs (the seller's own disutilities), as well as the costs of others whose goods and services are employed by the seller (his expenses).

3. Holding Power

In much the same way that, when we are seeking to understand the forces which determine demand, purchasing power must be considered in addition to the desire of the would-be buyer, so we must consider the holding power of the potential seller in addition to the factors which enter into his desire to sell. Holding power is the term here used to include all those conditions, other than seller's worth judgment and expenses and costs, which affect the seller's rational attitude. In short, holding power includes all the conditions, outside himself, which would affect a rational seller's

pressure to sell or his resistance to selling. The concept will become clearer when some of the chief elements which affect holding power are considered.

First among these may be put the *financial position* of the seller. To the extent that his financial position is his subjective value of money, the seller's attitude towards selling may be greatly affected thereby. The financial position may include his resources in cash or credit. They may include his earnings and his outlook for earnings, as these are affected by the course of his expenses and his sales. They may be indicated by the relation of his stocks or inventories of goods to his shipments or his unfilled orders; for if inventories begin to accumulate, there is a distinct tendency in most cases to put pressure on the seller or to break down his resistance to selling at the buyers' bids. As already indicated in discussing the way in which expenses affect the seller's attitude, we find here that such conditions work through the subjective worth of money. When the seller's situation becomes such that he is in urgent need of "cash", he may even go so far as to cut prices in order to move his goods and secure the desired funds.

Another element which seems to merit consideration primarily as affecting the seller's holding power, lies in certain physical conditions affecting the holdability of the product. Probably the most obvious and usually discussed of these conditions is the *perishability* of the product. In addition to this, we may distinguish *storability* as a distinct factor, for even if the product be nonperishable, it may be of a nature which prevents its economical storage, and this condition may in itself lead to forced sale. Milk and fruit are products which may illustrate the way in which perishability puts pressure on the seller. Coal is a product which is so difficult for the producer to store that it must usually be shipped as mined. In addition to these characteristics of the product, there is the matter of plant capacity for storage. This may be large or small, and in the latter case, the inadequacy of storage space may be due either to natural conditions or to the financial position of the seller.

Finally, there is the matter of *competition*. The intensity of competition in the trade and in the neighborhood of any given seller

may be an important factor in his attitude towards selling, operating either to put pressure upon him or to stiffen his resistance to selling. Trade associations and monopolistic agreements need only be referred to as being among the institutions which may affect competition in this way.

4. Will to Sell; Sentiment

Among the more interesting elements which go to make up the factors that enter into a seller's offer, is one which is not a matter of reason. It is not a matter of reflective choice of means to ends. It is a matter of what used to be called the "will"—the will to sell. This factor is generally referred to in business terminology as "market sentiment". Probably it is the emotional attitudes of the seller that are chiefly involved, and sentiments are organized sets of emotional tendencies. Feelings of optimism or pessimism develop into buoyant bullishness or fear and panic. The obstinate determination to fight the price-cutter may arise in a seller's mind. Here, too, probably is to be placed the tendency on the part of many sellers to maintain the customary mark-ups or discounts—in short, custom may, in part at least, be classed as a sentimental factor in the price attitudes of sellers or buyers.

5. Sellers' Market "Participation Values"

Closely related to the will to sell, is the *seller's response to the reactions of other sellers to what he himself does*. He perceives his interrelations with other sellers in a given market. He learns their reactions to his selling policies. If his experience is that cutting his price will start a price war, he hesitates to make the cut. He may follow some "leader", who "holds the umbrella" over the market. And so on through a wide range of considerations. Some of these participation responses tend toward preserving or attaining competitive equilibrium; some toward restriction of competition.

6. Seller's Judgment of Buyer's Position and Attitude

In dealing with the two-sided relationship between buyers and sellers, it is necessary to consider that both the buyer and the

seller may know something about each other's positions and attitudes. In this case, any factor which has an important bearing on the position of one may work not only through the one's own attitude, but also through the effect which the other's knowledge of that position has on the other's attitude. For example, there is no reason to doubt that, through experience at least, the seller becomes aware of the fact that the demand for his product is inelastic or elastic, as the case may be. He is therefore able to judge the attitude of the buyer as affected by conditions bearing on the elasticity factor. He acts accordingly in pricing his product.

III. DETERMINATION OF OBJECTIVE VALUE

Having now listed and analyzed the main factors which enter into the attitude of potential buyers and sellers towards a given good, it is time to consider how these various factors function in the final determination of an objective value. This consideration may begin with the simplest possible case, which is one that involves the determination of a value which is objective in the sense that it is recognized by two persons. The maximum of simplicity is attained, furthermore, when we consider only two goods. In short, the problem is to show how, in theory, the subjective values of one person for two given goods are brought into relation with the subjective values of another person for the same two goods in such a way that there is an exchange between the two persons, and an objective value results.

Perhaps it is fitting for the purpose in hand to keep alive an old tradition by calling these persons Crusoe; although it now becomes necessary to distinguish Crusoe A from Crusoe B. To illustrate this case, the following diagram is presented:

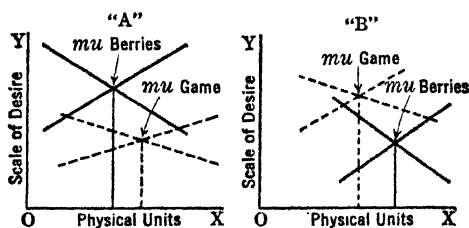


FIG. 3

It is assumed in the foregoing diagram that Crusoe A has a strong desire for berries, but as he is inactive, he considers them costly. Thus his subjective worth and marginal utility (μ) of berries is high, as illustrated by the length of the solid vertical line in Crusoe A's chart. In the same way, Crusoe A has a weak desire for game, and being well equipped and a good shot, he considers the cost of game to be low. Thus the shorter vertical dotted line shows the lower subjective worth and marginal utility (μ) of game. On the other hand, in Crusoe B's case, we have an exactly opposite relative valuation of the same two goods. Roughly speaking, therefore, we may say that Crusoe A's valuation of berries in comparison with game is as 2 to 1, while Crusoe B's valuation of game in comparison with berries is also as 2 to 1. Thus we have the basis for an exchange.

If Crusoe A and Crusoe B are known to one another, and come into contact in such a way that their respective attitudes towards the goods in question are recognized, we may assume that the exchange takes place. Then it is bound to tend strongly toward a rate of exchange which will reflect the relative valuations, or subjective values, just indicated. Thus we may say that the objective value of berries in terms of game, as applied to the physical units of these objects which are assumed in the foregoing statement of subjective values, will tend to be equal. The law may be stated somewhat as follows: *Under certain conditions, two individuals will tend to exchange until their subjective values are equalized, and the resulting objective value will be an equilibrium between their subjective values.*

It is important for the student to realize that in such a determination of objective value, we begin with the assumption of four "primary values", which are marginal utilities or subjective worths, two in the mind of each of the two individuals who are involved. Each individual is then assumed to be motivated by his own tendencies toward the two goods. This condition involves comparison, which is determined by the relative marginal utilities or subjective worths of the two goods, and results in a preference or valuation which we call a subjective value. Then these subjective values

result in bids and offers. When the bids and offers result in exchange, an objective phenomenon occurs which is called an objective value.

Such a case as is assumed in the foregoing discussion, however, is too simple to fit the facts as we find them in most markets around us today. In the vast majority of cases there are numerous buyers and numerous sellers. Frequently there are numerous goods which are being considered by all buyers and sellers, or are functioning in the motivation of all. In order to analyze the more complex situation which thus results, it becomes necessary to consider series of bids and offers, as these express the attitudes and tendencies of numerous buyers and sellers. In short, the next step is to develop the concept of demand schedules and supply schedules as representing the numerous participants in a complex market.

A. The Composition of Demand and Supply Schedules

I. General Nature of Such Schedules

Demand and supply schedules are a series of subjective values or prices, usually involving as one item some "price good", which is usually money. It is to be stressed that the series of quotations or bids or offers, whether they be listed in a table or plotted as curves, are purely subjective. They are individual valuations expressed in the form of bids and offers. They have not yet become objective through the process of cancellation and concentration which occurs when sales are effected. These subjective valuations are the mere potentials of exchange. They are the reactions or tendencies of potential buyers and sellers, which may both encourage and facilitate exchanging. It is when so regarded that they are most effectively thought of as "demand prices" (buyers' bids) and "supply prices" (sellers' offers).

These series of individual subjective values which constitute the *exchange potential* within the field of the market, tend to become "arranged" in the order of their magnitude, or become arrayed in an orderly series from low to high, by the process of competition.⁴¹ If we assume that the individuals involved are seeking to get the

⁴¹ Cf. above pp 135, 148f, 159; and below, p 292f.

most they can out of the market, we may assume that each buyer will try to find the cheapest seller, and each seller will try to find the buyer who is willing to pay most. The result of such a hunt by the buyers and sellers, is a tendency to establish a situation that is well illustrated by two curves superposed: a descending curve of buyers' bids or demand prices, and an ascending curve of sellers' offers or supply prices. The process will be explained in more detail in following pages.

2. Demand and Supply Not Quantities of Goods, Though Related to Such Quantities ⁴²

Such being the general nature of demand and supply schedules, it is not difficult to realize that they are expressions of desire-intensity and effectuating powers, which it is hardly possible to conceive of as themselves consisting of a quantity of goods. Since this concept is most troublesome in the case of "supply", it will be well to consider the matter first from that point of view.

(1) *Meaning of "Supply".*⁴³ We find two senses in which the word, supply, is used in economics. Some economists, when they speak of supply, always mean a quantity of goods. This way of using the word may be said to refer to "market supply". Other economists, however, when referring to supply, always have in mind a concept of intensity, as distinguished from a quantity of goods,—say intensity related to the attitudes or tendencies of potential sellers. This concept of supply may be called "schedule supply". It is most important to consider the significance of these two concepts of supply.

Most frequently, the term, supply, is used to designate a quantity of goods in the sense of some number of physical units—pounds, bales, bushels, pieces, etc. At first glance, such a quantity seems to be something that is definite and precise. On second thought, how-

⁴² See Malthus, *Principles of Political Economy* (2nd ed., 1836), pp. 61ff., 72f.; N. W. Senior, *Political Economy*, pp. 11, 16. J. E. Cairnes, *Leading Principles*, p. 113 and elsewhere; H. Sidgwick, *Principles of Political Economy* (1901), pp. 185-7; J. A. Hobson, *Economics of Distribution*, pp. 10f., 58f.; L. H. Haney, "The Social Point of View in Economics", *Q.J.E.*, (1913-14), pp. 301ff.

⁴³ Cf. Henderson, *Supply and Demand*; L. M. Frasei, *Economic Thought and Language*, Ch. X.

ever, several questions arise. Is this quantity, or number of units, the quantity which is actually sold? Or is it the quantity which is merely available for sale? And if it be the quantity available for sale, there is the question, When? Is this quantity available for sale now, or sometime in the future? Related to these latter questions, is the question, Is it a producible quantity, or is it a "fixed" quantity which cannot be added to by production?

Considering further some of these questions, one notes that if it be meant, as is sometimes the case, that the supply quantity is the quantity that is actually sold, a quantity is being used which is identical with the quantity bought. What is actually sold, is actually bought. In other words, the quantity which is sold, is that quantity which is exchanged.

More than that, both the quantity sold, and the quantity bought, are obviously dependent upon the price. In this sense of the quantity-supply, therefore, one is bound to reason in a circle, by using as an assumed cause what is in reality a result.⁴⁴

In economics as a social science, it is theoretically inexcusable to use the term "supply" in the sense of the quantity which is *actually supplied*—sold—at a given price.

When we come to consider the supply-quantity as meaning what is *available* at the present time, or what is for sale now, we probably are considering what is the most common idea. Most laymen, as well as most economists, probably use the word supply in this sense, and therefore it requires an especially careful examination. With this in mind, the following points should be carefully considered.

To the extent that supply can be considered as a separate force, the quantity now for sale is *effective on the supply side* only through sellers' offers.⁴⁵ And these are influenced by the several factors which have been pointed out in the preceding discussion. It is not quantity, as such, which affects the sellers' offers or supply prices, but the subjective worth of the particular quantities which are held

⁴⁴ Cf. H. Sidgwick, *Principles of Political Economy*, who points out that the equation of supply and demand fails to explain value, when supply and demand vary with price.

⁴⁵ Cf. above, pp. 21, 49, 166, and below p. 307f

by the individual sellers, together with the disutility-costs and expense-costs, the holding power, etc. Quantity may have an immediate effect upon supply prices, but it is only through supply prices that it can affect the market price on the supply side.⁴⁶

In the second place, as suggested in one of the preceding sentences, the quantity available for sale, as a matter of concrete reality, consists of the different particular quantities held by the different particular individual sellers. It is an unreal and abstract procedure to consider the quantity as a total. The only way in which these several different quantities find expression in the determination of value is through the series of particular and different subjective prices which are the supply *schedule*—a series of supply intensities.

In the third place, the quantity for sale may affect the buyers' estimates and consequently their bids. As a mere quantity, therefore, it functions in determining market values not only on the supply side, but also on the demand side. The only way by which we can keep demand and supply separate is to deal with them as "forces"—as the desires of buyers to buy and of sellers to sell!⁴⁷

Finally, in the fourth place, it should be emphasized that it is only a little less illogical to treat supply as a "quantity available for sale" than it is to treat it as the quantity actually sold. Fundamentally, it should be clear that (a) mere "availability" is a contingent and dependent condition, (b) that the *effectiveness* of the quantity available depends upon the price, and (c) that, in the long run, the quantity available is determined by prices, in all those cases in which the good in question is producible. In fact, the quantity for sale is the quantity that *might be sold*. How much of it will actually be sold is unknown, and *is as much the*

⁴⁶ It may affect buyers' bids; but, aside from quantities in *buyers' hands*, quantity affects buyers through their estimates of sellers' tendencies to sell.

⁴⁷ L. M. Fraser, presumably following Sidgwick, rejects schedule demand and supply (intensity), ostensibly because they may act and react upon one another, but really because he believes that such interaction deprives them of "independence". But interacting forces may be logically independent. Moreover, the quantities of goods available for sale or potentially in demand, are often interrelated. Fraser is at pains to argue that buyers may also be sellers; that two different products may have different producers but identical consumers, etc.—all of which makes inapplicable his own analysis of supply and demand as quantities. (See *Economic Thought and Language*, pp. 166-170).

problem to be determined as is the price itself! Put this way, one readily sees that, at bottom, the concept of quantity available for sale involves as much question-begging procedure as the other.

Perhaps, too, it should be pointed out in this connection that the *effectiveness* of the quantity available for sale may be said to depend in part upon the holding power of the seller, or his desire to sell. Are these elements, then, not of fundamental importance? Can we ignore them and assume that the mere quantity is the supply factor in price determination, regardless of who holds it, or what the holder's attitude towards selling may be?

There remains the possibility that by a supply-quantity one may mean a quantity which is only potentially available—available *sometime* in the future. For example, the business man may consider as the supply of his product the total current production plus net imports plus stocks on hand at the beginning of the period. Unquestionably, the total physical supply available in a period is a matter of importance, particularly when the figures setting forth such a quantity are comparable with preceding periods. By such studies, the statistician may arrive at empirical conclusions as to the probable effect of a change in total quantity upon buyers and sellers jointly, as expressed in prices.

Back of such reasoning, however, there is of necessity some assumption as to how a change in total quantity over a period of time, will affect the several attitudes of the buyers and those of the sellers of the product in question; and only on the basis of some assumption in this respect is the quantity potentially available significant at any given time. On the other hand, in the long run, it will be found that the quantity that is potentially available is itself dependent upon prices—upon sales, expenses, etc. Experience with the price of the given product as compared with the expenses of producing it during the preceding period, together with the outlook for the price of the product and for the expenses of producing it during the ensuing period, is the most important condition which influences the producers thereof.

In short, it may be said that if we are to consider supply as a potentially available quantity, we are dealing with a quantity which

at any given time is unknown, and which becomes actually effective only as it approaches the position of the quantity available for sale now—a position which has already been disposed of in a preceding paragraph.

In general, the concept of supply as a quantity is to be avoided in any fundamental discussion of the determination of value, for the reason that such a concept is in most cases *necessarily a price-determined one*. Except possibly in the case of fixed-supply products, such as non-producible works of art, this is a logical objection to all mere quantity concepts. Even in that case, moreover, it will probably be found that different dealers in different makers' instruments, paintings, or the like, ask different prices at different times and places, without much regard to the quantities available. Perhaps the essence of the matter is that the problem of value determination lies within the field of choice, and deals with cases of sellers' offers which are mere potentials. Thus, when the quantity is such that the seller has no choice, but has to sell whether he desires to or not, and at any price which the buyer will offer, we are brought face to face with a special and exceptional case. This case arises not infrequently in the markets for perishables. It may be said that when the quantity is so very large as to be called excessive, the case approaches that of a free good. At the other extreme, when the quantity is very small, so that consumers experience a great scarcity, we approach the case in which the good is "priceless". In short, when the *quantity* is a matter of no "*importance*", either because of economic superabundance or of absolute scarcity, we pass out of the realm of economic values.⁴⁸ It is importance expressed in human choices, with which the economist is concerned.

It may be thought by some that this analysis of concepts of supply is unreal. Perhaps it will be helpful, therefore, to note that in a discussion of industrial prices issued in a United States government bulletin, the importance of the point is well illustrated. In this bulletin the following language appears:

According to the law, the supply and the demand for an article are supposed [by "traditional economists"] to be equated at a price. Unfortu-

⁴⁸ See above, pp. 187-8.

nately, the meaning of 'supply' is today most ambiguous. Is 'supply' 'the amount of an article sold at the price', or is it 'the amount which would be forthcoming at the price if some one would buy at that price'?... The traditional economist calls 'the amount sold' the supply when he is dealing with actual markets. If he called 'the amount forthcoming if there were takers at the market price' the supply, then it would become at once obvious that in a large number of industries today supply and demand are not equated by price. But when the traditional economist comes to defend the general policy of *laissez faire*, he unconsciously shifts his ground and means by supply 'the amount forthcoming at a price' rather than the amount actually sold.... The gradual widening of the difference between 'the amount sold' and 'the amount forthcoming' has bit by bit disrupted the working of the old law of supply and demand.⁴⁹

The chief interest in this quotation lies in the fact that it helps to dramatize the point presented in the foregoing discussion. The statement is quite correct as a criticism of those "traditional economists" who use the term supply as representing a mere physical quantity, and at the same time try to treat it as a price-determining factor. The author of the statement, however, is surely in error when he assumes that there is no alternative and that supply must mean either (1) "the quantity sold" or (2) "the quantity forthcoming". The truth is that supply can mean *neither*!

It has long been the author's practice,⁵⁰ to treat supply in a price-determining sense, as being an *intensity*, rather than a *quantity of goods*. Supply, as a "force" which enters into the determination of the value of a good, is compounded of desire to sell and the will to sell, backed by a holding power, which determine the attitude of potential sellers towards selling. Supply in this sense is a matter of pressure to sell, and resistance to selling, as they affect the actions of potential sellers. As a price-determining factor, supply is a potential in the field of value. In this sense, and in this sense only, can supply be coordinated with demand as a price-determining force.

Surely, the reader will have observed that, although there is much talk about "the law of supply and demand", such a law is rarely formulated! The reason for this anomalous condition is

⁴⁹ *Industrial Prices and Their Relative Inflexibility*; Senate Document No. 13; 74th Congress, First Session; A Letter from the Secretary of Agriculture, dated January 17, 1935. This is a pamphlet prepared by Gardner C. Means. The quotation is found on pp. 22-23.

⁵⁰ See, e.g., L. H. Hancey, *Business Forecasting*, p. 6, and Ch. VIII.

probably to be found in the fact that supply and demand have been so generally treated as secondary—as results—as mere physical quantities. The meaning of any scientific law of supply and demand would lie in the explanation of price determination which would have to be implicit in it. It would be a generalization concerning the determination of objective value, based upon the interaction of “forces” of supply and demand. But physical objects—commodities, for example—are not “forces”; they are passive. They may limit, but not cause value.

It is so difficult to make unambiguous and errorless statements in such matters that the following illustration may be presented as best conveying the meaning. In early 1939 the price of copper was held by the producers at 11¼ cents. This “price” was claimed by them to be reasonable; and it must be admitted that if demand and supply be considered as quantities, dependent upon some price, there is no way to disprove such a claim. According to such a theory, production may be controlled and prorated so that the quantity for sale will equal the quantity demanded, *at any price!* (This gives a sort of equilibrium.) The argument is advanced that little if any copper would be sold at a lower price, such as 10 cents—the “*quantity demanded*” would not increase! But how is that known? If true, how is it to be explained? At what price *would* there be an increased sale, and equilibrium? There is no answer to these questions except in terms of demand-and-supply-intensity schedules. The price was originally run up to 11¼ cents, largely because the buyers’ bids which were made proved a high demand intensity; and it held there for a time, partly because sellers’ offers were raised accordingly, which, to some extent, was the result of increased cost and expense of production. The reason why 11¼ cents became too high in 1939, is that potential buyers were then unable or unwilling to pay that much. Assuming competition, any new equilibrium, including the quantities salable (and therefore producible without loss), must depend upon the same sort of “forces”—the intensities of demand and supply, reflecting the economic motivation of buyers and sellers. By such reasoning only, can the *quantities* of copper demanded or supplied be explained. The quantity pro-

duced and the quantity actually offered for sale are *motivated* quantities, and are determined by the relation between demand intensity and supply intensity, upon which depend the advantage of exchange and the equilibrium of the market.⁵¹

Again, the reader will have observed that, while economics is often spoken of as a *social* science, it is common to treat problems in economic theory in terms of non-social business interests. The business man reasons in terms of quantities of goods bought or sold, at prices which, in essence, he takes for granted. The business man, taking "the entrepreneur point of view", decides upon his substitutions and margins, in terms of the prices which he finds; and he believes that, in the long run, the price of his product is in some way fixed by his expense prices. This individualistic analysis suffices for the purpose of his art, money making. But when the economist does likewise, he himself becomes a mere theoretical business man, and ceases to be a social scientist.⁵²

Accordingly, the great importance of the concept of supply as the intensity of a potential seller's desire to sell, is that it then becomes a "force" which is coordinate with the force of demand; and

⁵¹ Thus we may forever exorcise such thoughts as J. S. Mill's about "the permanent tendency of supply [quantity] to conform itself (sic) to the demand [quantity] which is found by experience to exist for the commodity when selling at its normal value" (cost of production). *Principles of Pol. Econ.*, Bk. III, Ch. III, § 2.

⁵² Incidentally, the economist, by firmly grasping the social point of view, may help to dispel the notion which prevails among many business men that the price is not determined by demand and supply forces, because the *quantity demanded* seems at times to be independent of price. In the steel and copper industries, for example, it is sometimes stated that in periods of depression, there is no use in reducing prices, for the alleged reason that no one would buy any more steel or copper at lower quotations. Sometimes, indeed, prices are cut by the sellers soon after recovery sets in and large sales can be effected. But this idea is based upon erroneous reasoning, including an assumption that none of the sellers is to fail and that all are to participate pro rata in the selling. The fact that the price is to be reduced some time in the future, when "the quantity demanded" will increase, shows that the "pegged" price is not warranted by demand and supply forces. It is assumed that some time in the future the quantity demanded, considered independently, will pick up; and that *then* a price will be named ("determined"?). Meanwhile, the old price, determined by old demand and supply intensities, is "pegged". But how does anyone know that reducing the price according to the current demand intensity would not hasten the time when increased buying will occur? If no sales are being made, why not allow an equilibrium price?

the two forces explain the determination of economic value in causal terms. Then the great law of supply and demand emerges as the heart of economic analysis. When economics is based upon the conditions which motivate individuals, not only as producers and consumers, but also as buyers and sellers, it becomes a true social science.

(2) *Meaning of "Demand"*.⁵³ There are two senses in which the word demand is used. It is sometimes used in the sense of the quantity demanded; sometimes we find the term used to designate the intensity of a buyer's attitude toward quantity.

When anyone thinks of demand as being the quantities or number of units of a good that are "demanded" by buyers, what does he mean? Does he mean the quantity that is actually bought? Does he mean the quantity that is potentially in demand? If the latter, at what time—now, or in the future? These questions are sufficient, as was the case in the analysis of supply as a quantity, to suggest the difficulties of such a concept.

As in the case of supply, too, it is easy to demonstrate by the difficulty of answering the foregoing questions that the concept of demand as a quantity of goods, is not expedient. We arrive at the conclusion either (1) that this concept makes demand depend upon the very price which the demand is supposed to aid in determining, or (2) we come to cases in which there is no choice, no market, and therefore no objective value.

The first alternative is illustrated by the individual business man's usage, according to which demand is thought of as a quantity sold at a given price. Obviously, in this case, the demand is always equal to the supply!

In the second alternative, in which there is no choice, we find two general situations as follows. In one, there is absolute scarcity, as in cases in which the minimum subsistence requirements are involved. This might lead us to such lengths as talking about the "demand" for food by a starving man. In the other case, the idea of demand represents the opposite extreme, in which there is an ab-

⁵³ Cf. L. M. Fraser, *Economic Thought and Language*, Ch. X; Henderson, *Supply and Demand*, 21ff

solute lack of demand, because there is so large a quantity that the maximum of use has been reached. In the former case, it is sometimes said that the object is "priceless". In the latter case, it may be said that the object is "worthless".

Thus we arrive at the conclusion that the "quantity demanded" either takes one to the extremes which lie beyond the range of economic value, or to a concept of demand which is price-determined and thus begs the question which is the central theme of economics.

The term "demand", therefore, will be used here to designate a "demand intensity" which functions in the determination of price. Demand, in this price-determining sense, represents a compound of desire to buy and will to buy, backed by the purchasing power of the potential buyer.⁵⁴

Demand, in this more fundamental sense, depends primarily upon the "uses" of goods. Considered so, it enables us to state *reasons* for anticipating some results—whether of a change in quantity available or of a change in prices. (Considered as a quantity bought at a given price, "demand" is a mere *test* of results.) For example, can anyone by any study be sure what will happen to the relative quantities of bread and butter "demanded", if all we know is that the price of butter is to be reduced? But if we know how intense the desires for bread and butter are, we can draw conclusions. If the individual is very fond of butter, particularly if it agrees with him and he assimilates it, he may eat more butter and less bread. Otherwise, he may either increase proportionally his consumption of both bread and butter, or transfer his "saving" in cost of butter to the purchase of more meat or gasoline. Tastes, wants, and the like, must be known.⁵⁵

⁵⁴ This concept of demand is common enough, although we sometimes find ourselves slipping into the "quantity-at-a-price" concept of demand even after defining it in subjective terms as a series of bids or subjective demand prices.

⁵⁵ In an article entitled "The Relations of Commodities in Demand" (*Amer. Econ. Rev.*, Sept., 1938) a writer, E. E. Lewis, argues that while "uses" are fundamental, the relations between goods depend upon price, and he proceeds to "suppose that the quantities purchased depend solely upon the money income received and the several prices paid" (p. 489). But when he comes to deal with what he calls "independent" goods (not substitutes or complements), he says that

(3) *The "Business" Point of View Analyzed; "Speculative" and "Commercial" Demands.* It is important to notice that in adopting this concept of the nature of demand and supply, we are adhering strictly to a social point of view,⁵⁶ and are rejecting a point of view which is significant only to an individual who does not understand or act upon his social interrelations. Supply quantity and demand quantity are probably the most significant concepts of supply and demand from the individual point of view. The individual, in "minding his own business", takes prices for granted, for he does not consider himself—unless he be a monopolist—to be in the position to control prices, and usually, if he thinks about the matter at all, he regards himself as but a drop in the ocean of price-determining forces. What he is interested in, is not how the price is determined, but what quantities of goods he himself is to buy or to sell at the prices which prevail. He is interested in what he may call "his share of the business", meaning a quantity of goods. Thus he may even cut his selling price in order to get his share of the volume of business done in his market.

When the business man cuts his price to get "volume", one's first thought may be that he is thereby illustrating a case in which quantity supply or quantity demand enters into the determination of price. A moment's reflection, however, shows that a "cut" in price must be measured from the "market". It is significant as a cut, and is effective in attracting volume, only as long as it differs from the market. More than that, it does not affect the general level of the demand and supply schedules, which rest upon the fundamental factors that have been discussed on preceding pages. The effect of a price cut in such cases depends upon and assumes the maintenance of the general level of the demand and supply schedules. It does not even necessarily change the total quantity of the goods which

all prices are in a system, and that the relation between the "demand" for beef and that for gasoline depends partly upon the psychological "reaction" of the consumer with respect to gasoline! As a matter of fact, it is not true that even the quantities of beef and lamb "demanded" depend upon prices; for if I dislike lamb, I do not buy it. If I am a heavy meat eater, I may regard a drop in the price of lamb as a means of enabling me to eat more meat (both lamb and beef).

⁵⁶ See above, pp. 80ff.

are exchanged, since it may merely take business away from someone else.

Demand and supply in the sense of quantities of goods may be designated as *speculative* demand and supply, or as *commercial* demand and supply, depending upon the manner in which the quantities involved are determined by price. (1) "Speculative demand" and "speculative supply" are determined by price *changes*, the change being the essence of the situation. In this case, the *change* is assumed to occur without explanation, and to influence a buyer's sentiment as the sole factor. The speculator, moreover, is concerned with quantities of goods that are only temporarily out of the market, and which come back as traders buy and sell from moment to moment or day to day. There is no production or consumption, in the ordinary sense. Such trading depends upon, and is governed by, price changes. Nothing develops bullish speculation more quickly than a rise in price which leads to further rises in price that build up like a house of cards. Similarly, the thing works in reverse during declining prices. (2) "Commercial demand", on the other hand, differs from speculative demand in that it does not depend upon changes in price, but upon *spreads* among prices, the prices and the spread between them being taken for granted as data. A characteristic type of commercial demand rests upon the spread between the price of some raw material and the price of a finished product into which the raw material is converted. Thus the commercial demand for a quantity of raw cotton depends largely upon the spread between the prices of cotton goods and the price of raw cotton.

These are all individual or business-man points of view, and are not helpful to the social scientist in his attempt to understand the *cause* and *determination* of value,—unless, perhaps, it be as a mechanism through which the fundamental forces may be thought of as working out their results. Nevertheless, the quantity concept of demand and supply is so prevalent that one cannot be too specific in demonstrating its limitations. For example, it is unquestionably true that prices are sometimes manipulated through operations which work on the basis of the quantity of goods bought

or sold. An individual or group of individuals may "dump" a large quantity of some object upon the market and thereby break that market. This, however, has nothing to do with the economist's problem of value determination. The effect of the quantity dumped on the market depends on the nature of the market, which in turn depends on the forces which govern the primary demand and supply schedules.

Again, it is unquestionable that *changes* in price—although these changes are themselves results of the price-determining forces which we have analyzed—may affect or react upon the intensity of demand and the pressure of supply. Thus a very sharp change in price may produce a sentimental effect, either of optimism or of pessimism, in the minds of buyers or sellers. Or a prolonged trend in prices, caused by the fundamental price-determining forces, may react upon the minds of buyers and sellers in such a way as to produce a tendency to anticipate a further change in the same direction. Thus in a declining market, buyers often wait for the bottom, and sellers take a "short" position; and in a rising market there is forward buying, or "covering", by those who have sold "short", in anticipation of a continued rise.

These well-known phenomena are caused by the limitations of the individual judgment, which is either affected by the unusual degree of change or becomes accustomed to a long-continued trend. This gives rise to the phenomenon of "price momentum", a term which the author uses to designate the tendency of a change in prices of certain amount or duration to carry on in the same direction. It leads to what is called in the business world "over-discounting", and to excessive speculative swings. It therefore is the reason for the sharp counter-movements in speculative prices which are often referred to as "technical corrections".

But, however interesting and important such phenomena of speculative markets may be, the point is that they directly concern the particular interests of the individual speculator. They are not significant as to the causation of value or price itself, nor as to the determination of what we may tentatively call the normal level of prices. In fact, even in the business world there are recognized

fundamental distinctions between investment and speculation, and between long-term forecasting and short-term forecasting.

3. How Supply and Demand Schedules or Curves Are Composed ⁵⁷

It is not the intention to present a complete discussion of the subject of the foregoing heading. The purpose here is merely to state those points which a logical mind, seeking to understand the determination of objective values, would regard as most essential to such an understanding.

(1) To begin with, let it be assumed that the individual buyers and sellers in a market, each and all are in the position of buying or selling equal quantities of the good in question. Then each bid, regardless of its intensity or level, stands for a given equal quantity of goods; and similarly, each offer represents an equal quantity of goods, no matter how high or low the offering price may be.

Under such circumstances, we may represent several bids by vertical lines of different lengths, and if we take them as we come upon them by chance, they are likely to be found in no particular order as to their magnitude. They will resemble the unarranged group of lines in the left half of the accompanying diagram.

Then one may assume that the buyers who make these several bids come into contact, as competitors, with a group of sellers. The result is that the buyer who makes the highest bid has first call on the goods offered by the sellers. If there were only one seller, he would be the only buyer who would get any of the goods. A moment's thought shows that, as a result, the several bids must tend to become arranged in the order of their magnitudes; and, while the matter is conventional, it is customary to regard them as arranged from high to low, proceeding from the left to the right along the axis OX. The several lines are thus ordinates, measured as to their intensity or magnitude on a scale which forms the axis OY.

We may then think of the points which lie at the upper ends of

⁵⁷ Cf. H. Cunyngname, *A Geometrical Political Economy*, Chap. III (1904); Marshall, *Principles of Economics*, Bk. III, Chap. III, § 4; Bk. III, Chap. VI, § 4; Bk. V, Chap. III, § 5 (see the footnotes).

these vertical lines as being connected by a "curve", which helps to reveal the arrangement of the bids. This is illustrated in the right half of the accompanying chart.

It does not seem necessary to illustrate the procedure with reference to the construction of a supply schedule and a supply curve.

The process is logically identical with the foregoing one. The essential difference is that the sellers' offers are arranged in an order which is inverse to that of the *buyers' bids*, and thus rise in magnitude from low to high, as we move to the right along the axis OX. The reason is obvious, namely,

that in case there is only one buyer, with competition among sellers, he would buy only the goods of the seller whose offer is the lowest.

If the largest possible quantity is to be disposed of, and only that quantity for which buyers bids will exceed or equal sellers' offers, the offers (and the bids) must be arranged as indicated.

(2) Probably, however, the usual condition is that the various individuals who demand or supply a good, do not all demand or supply equal quantities. In that event, the composition of demand and supply schedules is slightly more complicated; and the more so, in that the quantities demanded or supplied by any individual may really fall into two or more parts, since he may demand or

supply some at one price, and some more at another price. For example, consider the accompanying diagram (Fig. 5).

In this case, the different rectangles constructed on the base line OX represent two interrelated variables,

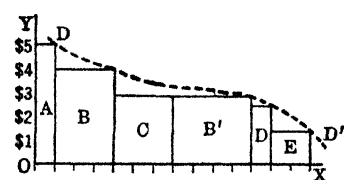


FIG. 5

one being the intensity of the demand or the demand prices of several individuals, the other being the number of units of the given good which they demand at these prices. For example, the rectangle A represents the fact that individual A bids \$5 per unit for 1 unit of the good. The rectangle B represents the fact that individual B bids \$4 per unit for 3 units of the good. The rectangle

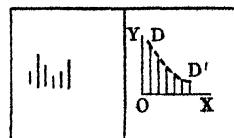


FIG. 4

C represents the fact that individual C bids \$3 per unit for 3 units of the good, and in addition, B' indicates that the individual known as B also will bid \$3 per unit for 4 units. Without carrying the explanation further, it is easy to understand that the resulting composite demand schedule takes somewhat the shape indicated by the dotted line which connects the upper right-hand corners of the several rectangles.

Exactly the same procedure might be adopted to illustrate the composition of a supply schedule, save that in this case we would logically represent the vertical distance as tending to become larger as the quantity supplied increased. This would correspond to the general situation, which is that in order to bring out larger quantities it is ordinarily necessary to offer greater inducements to sellers.

The process thus briefly indicated is one of a summation of individual bids or subjective demand prices, together with the potentialities as to the quantity that may be taken by each individual bidder. The result is a demand schedule or curve which is graphically represented by a line which tends to descend. In the case of a supply schedule, the "supply curve" tends to be a rising one. The distance along the line OX represents the number of units of a given good, for which the respective bids and offers are available. In short, the demand schedule is a series of subjective prices (bids or demand prices) for a quantity of goods that is potentially in demand, and the supply schedule is a series of subjective prices (offers or supply prices) for a quantity that is potentially in supply. It is the significance of competition that demand and supply schedules are arranged or arrayed as assumed in the foregoing illustrations, at the same time that they are brought into relation with one another. The demand schedule and the supply schedule represent valuations placed respectively by would-be buyers and sellers on the same kind of good at the same time, the assumption being that the several buyers are competing with one another in their desire to secure possession of various quantities of the good, while the several sellers are competing with one another in their desire to dispose of various quantities of the goods to the buyers.

In order to understand somewhat more clearly the way in which

the two sides of markets are built up, it may be well to consider next two general cases. The first is one in which each single buyer or each single seller is able and willing to take or to offer the whole quantity supplied, and each insists upon "all or none". Such a situation might exist in case of a few large steel manufacturers buying a certain kind of fuel or ore, or canneries bidding for fruit or vegetables of a certain area or grade. The other case is opposite, in that no one of the single buyers or sellers is able or willing to take or offer the whole quantity, which is the common situation in business. The first case is illustrated by the following pair of diagrams:

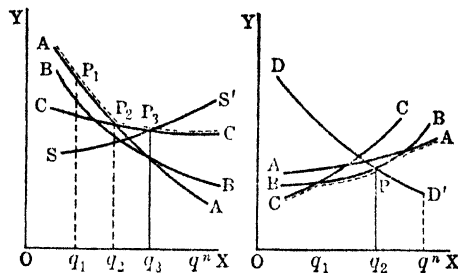


FIG. 6

In the diagram to the left, the assumption is that curves A, B, and C represent the individual demand schedules of three potential buyers, each one of whom desires and is willing and able to buy the whole quantity offered, so that there can be but one buyer. In this case, the supply schedule is made up of the offers of a number of competing sellers who offer various quantities up to the limited total, Oq^n . Their offering prices are represented by the curve SS' , which falls within the range of and intersects each of the individual demand schedules. It is assumed that the tendency will be to put the quantity Oq_3 upon the market, which quantity will bring the supply curve into equilibrium with the demand curves at the point P_3 . In other words, the individual demand curve CC will be the effective one, and C buys the whole quantity, since he is willing and able to take the whole quantity, and bids more—has a higher marginal demand price—for the quantity Oq_3 than

any of the other possible buyers. If, for any reason, only the quantity Oq_2 is offered, the bid, P_2 , is the highest required, and the price tends to lie somewhere between P_2 and the point on CC where the line q_2P_2 intersects. (Of course, if the maximum quantity were only Oq_1 , it would all be bought by the individual buyer A, since his marginal bid, q_1P_1 , would be higher for that quantity than the marginal bids of the others. The price would lie between P_1 and the point where q_1P_1 cuts the curve BB.)

(3) Similarly, the diagram to the right of Figure 6 illustrates a situation in which there are several sellers, A, B, and C, whose individual supply schedules are designated by the same letters. Each is assumed to desire to sell the whole quantity, all or none. The composite demand schedule for the good in question is represented by the curve DD'. It represents the bid prices of a number of competing buyers. In this case, equilibrium tends to be reached at the point, P, where the quantity Oq_2 is sold by B, since for that quantity the marginal offering price of any other seller is higher than B's, while the demand intensity will not allow the sale at a higher price.

Obviously, in these cases in which the individual buyers or sellers each demand or supply the whole quantity, the composite demand schedule is indicated by the highest bid and, for any given quantity, it would tend to follow the dotted line shown in the chart, which takes the course, first of A's individual demand schedule, and then shifts to C's. Similarly, the effective supply schedule would, for any given quantity, be the supply schedule of the individual whose offer is the lowest for that quantity. In the above diagram, it would follow first C's supply schedule, then shift to B's, and finally to A's, as indicated by the dotted line. The seller having the lowest supply price for a given quantity is the determining one.

The foregoing cases emphasize the fact that each individual's bid or offer is a marginal bid or offer.

To illustrate the second case referred to above, namely, the one in which no individual buyer or seller is able or willing to handle the whole quantity, the following pair of diagrams is presented.

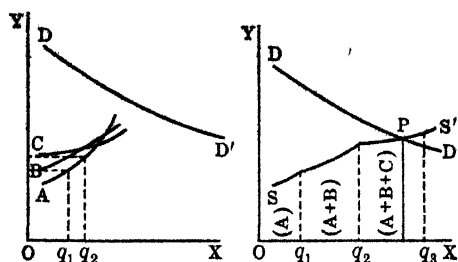


FIG. 7

In this case, which is the most common one, it is necessary to induce several suppliers to contribute, if the demand potentialities are to be fully realized. The demand is both so intense and so broad that no individual supplier is adequate. Accordingly, the demand schedule DD' is portrayed as lying above and outside the range of the individual supply schedules. Let these supply schedules be designated as A, B, and C, respectively. It is apparent that if the quantity Oq_1 is to be supplied, it is likely to come from the individual seller whose supply schedule is represented by curve A, since he is willing and able to offer the quantity Oq_1 at a lower supply price than any other would-be seller. A larger quantity than Oq_1 , however, makes effective the desires of both A and B to sell the good in question; and, insofar as the assumptions made in this case go, we may say that they will participate equally in selling the quantity q_1q_2 held by A, plus a similar quantity held by B. Similarly, beyond that point, seller C's offer may become effective, and he may begin to participate in any additional business.

Thus we arrive at the concept of a supply schedule or curve which consists of a series of segments representing the supply prices of different sellers for different quantities. In the diagram to the right of Figure 7, the supply curve SS' is thus composed. The lowest segment to the left represents the low portion of A's supply curve. Then come, successively, portions of B's and A's curves, then successive portions of C's, A's, and B's curves, etc. The quantity available, as measured on the line OX , is composed of successive quantities for sale at different supply prices by the different suppliers.

At the point of intersection of the demand and supply curves, P, the marginal unit of the actual quantity exchanged might be supplied by any one of the three individual sellers, but the total quantity would be composed of various quantities supplied by each of them.

A similar line of thought might be followed out with reference to the composition of a demand schedule, in the case that no one of the individual demanders is able or willing to take the whole quantity available. The method and line of reasoning would be identical with that followed in illustrating the composition of the supply schedule, the only essential difference being that the demand schedule would be composed of a series of descending segments, representing the potential bids of the several would-be buyers.

(4) *Interrelation of Demands.* Even a brief analysis of the composition of demand schedules calls for some discussion of the phenomena of "joint demand" and "composite demand". Without an understanding of such cases, it is impossible to analyze the determination of value in many important instances. Incidentally, we find here excellent illustrations of the vital importance of the technological factor in economic life.

By *joint demand*, under which head will also be included *derived demand*, is meant a demand for one product which involves a demand for another, the two being thus interrelated on the demand side. If the demand for one product gives rise to a demand for another product that is desired for complementary consumption with it, or for a single material that is required for its production, the demand for the complementary product or the raw material is to that extent "derived". Thus the demand for butter to eat on bread, or that for rubber to manufacture into erasers, is "derived". If the immediately demanded product requires *several* materials, the demand for the several materials is both derived and joint; they are wanted for joint use.

They may or may not be wanted in ratios which are completely fixed by physical conditions, but when such is the case, the problem is simpler.

For example, to no small extent, the demand for rubber actually comes from the demand for automobiles. This is a case of derived demand, insofar as rubber alone is concerned. It is also true, however, that the demand for steel is largely—say 20 per cent—derived from the demand for automobiles. Thus the demand for rubber and the demand for steel are to this extent a joint demand, the two being wanted for joint use in producing automobiles.

In illustration of this situation, there is presented the accompanying diagram.

The line DD' represents the demand schedule for automobiles, and the line SS' the supply schedule for automobiles. In this case, each of the series of offered prices which make up the supply schedule, consists of several different parts or elements, as indicated by the curves s_1 and s_2 . The line s_1 represents a series of offering prices for the rubber that goes into automobile tires. The line s_2 represents the supply schedule for the steel that goes into the automobile body and chassis. Thus the magnitude, PV —which is determined by the point (P) at which the demand and supply schedules intersect, and the number of automobiles exchanged at that point, V —is the sum of three different elements, as follows: aV , which is the marginal supply price of the quality and quantity of rubber that goes into the original tire equipment of a single automobile; ab , which is the marginal supply price of the quality and quantity of steel required for a single automobile; Pb , which is the marginal supply price of all other elements which enter into the make-up of an automobile.

In this case, the line OX is of particular interest, since it is used to measure units, each of which is compound. The units are automobiles, but each automobile consists of a certain quantity of steel, rubber, etc. Thus the supply schedules for the component materials may be correlated with those of the joint product.

The significance of the analysis largely depends upon two condi-

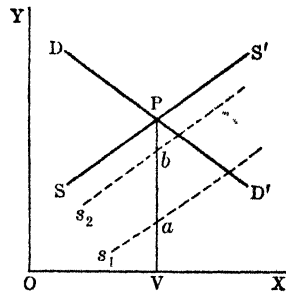


FIG. 8

tions: (1) the proportions of the total quantities of steel and rubber used for all purposes that go into the production of automobiles, and (2) the degree of fixity and definiteness which attaches to the quantities of steel and rubber that are required in making a single automobile. Obviously, if but a small part of the steel or rubber markets depends upon the automobile business, the joint demand derived from the sale of automobiles will be a minor factor in the price of those materials. Obviously, too, if the quantities of steel and of rubber that are required to produce an automobile are variable, the amount of demand for each that will be derived from the demand for automobiles will be indefinite and variable. For example, if the demand for rubber in other products becomes more intense or the total quantity of rubber available is reduced, the tendency will be to put less rubber into automobile tires, reduce the extent to which extra tires are included as original equipment, or otherwise economize in rubber.

One usually has to look to such products as fountain pens, for example, to find cases in which the derived demand is based upon definitely fixed physical requirements. In the case of a fountain pen, there must be one point per pen. (Even in such cases, however, the points may differ in size.)

Coming now to *composite demand*, we find a situation which takes two different forms. In the first case, a simple commodity is demanded for several different purposes, which may be thought of as competing for it. Thus butter or sugar may be desired either for table use, for cooking, or for commercial canning, baking, etc. The supply quantity of butter or sugar comes from a source which may be described as single; but the demand is multiple. In this case, the demand schedule is composed by adding together, end to end, the demand schedules in the several different uses, with the general result that the lowest profitable use is the marginal point at which the value tends to be determined. If the quantity of sugar is ample, the marginal demand intensity (marginal demand price) will be found not in its use on the table or in the kitchen, but in its use for the lower grades of canning or confectionery.

In the second case of composite demand, we find a composite

commodity, the parts of which are necessarily produced together. The separate parts, however, have distinct uses and different markets, so that the demand for the compound product from which the parts are derived is thus composite. For example, raw cotton is in reality composed of lint, linters, seed, and hulls. These products in turn enter into the production of cloth, explosives, oil, meal, cake, etc. Much the same situation exists in the case of corn and of hogs. Each of these elementary goods has many uses, in the sense that its various separable parts go into different uses. In reality, such goods are bundles of heterogeneous utilities, and are thus distinguished from the case of butter or sugar, which have a practically homogeneous utility, but different markets.

The status of a commodity with respect to being compound is a matter of no great practical importance if there be no separate market for the original compound commodity itself. For example, there is no important market for seed cotton, the lint being separated from the seed very early in the progress of this commodity towards the market. In the case of such commodities as corn and livestock, however, there are well organized and distinct markets for the original compound commodities.

In the second case (involving composite commodities) the demand schedule is built up by laying one layer of demand upon another, and adding their several degrees of intensity to make a total. Thus it is apparent that we have here a case that involves joint cost.

In order to bring out the significance of this and the immediately preceding statements, there is presented next a diagram which is self-explanatory.

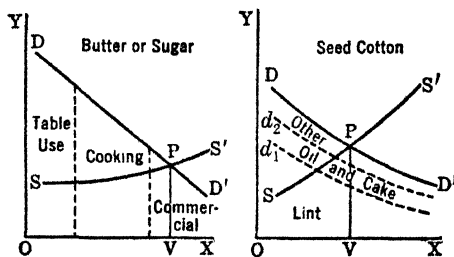


FIG. 9

4. Summary

The net result of the discussion of the determination of value down to this point, is as follows: We have arrived at a definite concept of a market demand schedule and a market supply schedule, which are composites of individual demand intensities and individual supply intensities. As composites, they represent group demand prices and group supply prices, and, in that sense, the marginal bids and offers are social margins. The schedules and the margins are social phenomena.

Each point in a demand schedule is an individual's subjective price, representing a subjective value; and the demand schedule is a series of individual subjective prices, representing subjective values. Each point in a supply schedule is an individual's subjective price, and the supply schedule is a series of individual subjective prices, such subjective prices representing subjective values.

All these points are merely *potentials*, insofar as an objective value or a price is concerned. They are not "prices"; they exist before prices are determined as objective phenomena. They are effective only within the "minds" (fields of motivation) of the several would-be buyers and sellers. They are not actual as operative phenomena. They exist before we know what the price is to be, or who are to be the buyers and sellers included in the exchange, or what the quantity exchanged is to be. To be sure, they are related to the total known available quantity, and they enter into the determination of the quantity that will be bought and sold. That, however, is very different from saying that they themselves consist of quantities of goods.

Chapter VI

THE DETERMINATION OF ECONOMIC VALUE (Continued)

B. *The Process of Equilibration*¹

Having arrived at workable concepts of demand and supply schedules in the preceding chapter, we are now ready to answer the question, How do demand and supply work together in the determination of value?

1. The Process

In any organized market, we find that, *at the same time* the schedules are "arranged" and take their characteristic form, they are being brought together and, as it were, are being superposed. Thus there comes into existence an intersection point or range, and there results a tendency toward an equilization of marginal bids or demand prices and marginal offers or supply prices, which coincide, or approximately coincide, at or in the close vicinity of this intersection point. With the aid of the accompanying diagram, we may briefly describe the process of equilibration as follows:

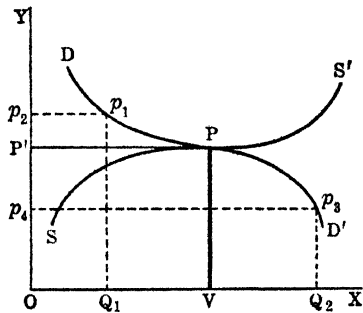


FIG. 10

The curve DD' represents a demand schedule, and thus reflects the desires of potential buyers, together with all factors which enter into potential bids or demand prices as analyzed in the preced-

¹ See H. Sidgwick, *Principles of Political Economy*; F. Böhm Bawerk, *Positive Theory of Capital* (Smart's trans.) pp. 198ff., and "Grundzüge der Theorie des Wirtschaftlichen Güterwerths" in Conrad's *Jahrbucher f. Nat. Oek.*, N.F., XIII.

ing pages. The curve SS' similarly represents sellers' supply prices, including all factors which determine the offers that would-be sellers may make. There is thus no equilibrium between demand and supply intensities except at the point P , for at any other point, either to the left or the right, there is either an excess of the desire to buy or of the desire to sell. (This may take the form of an excess in the number of buyers over the number of sellers, or *vice versa*; or it may simply be that a given number of buyers are willing and able to *bid higher* than the same number of sellers are willing and able to sell for, or *vice versa*.)

The quantity OV represents the number of units of the given good which will be demanded and supplied at the value P . The vertical lines connecting P and V represent a marginal demand price and a marginal supply price, which are supposed to be approximately equal, and tend to coincide. The line PP' , parallel to the line OV , is thus the price level at which the several units contained in the quantity OV may be sold.

If more units than the quantity OV are placed upon the market, there will be no bids which are as high as the offered price, as is illustrated by the fact that the curve PS' is higher than the curve PD' . In fact, no unit of the good can be sold at any price higher than a point on the curve DD' , and therefore any units in excess of OV must, if sold, be sold at prices lower than those which the sellers are willing to take. Thus there is a tendency to reduce any quantity which exceeds OV .

On the other hand, any quantity less than OV results in a situation which is also characterized by disequilibrium. For such a smaller quantity, buyers would be willing to pay more than the highest figure that the required sellers would be willing to take. Obviously, the area DPP' is a buyers' surplus, and thus there is inducement to buy, up to a quantity equal to OV at a price equal to PV . Similarly, the area SPP' is a sellers' surplus, and there is an inducement to sell a quantity as large as OV at a price as high as PV . Thus the quantity, if it be a variable, will tend to increase to OV , bringing prices into equilibrium at the point P .

At this point, we often find some such statement of the equilibration process as the following: "The price tends to be located at a point where, at any given time, the quantity of goods demanded at that price is equal to the quantity of goods supplied at the same price."

The first question this statement leaves unanswered is, Why is there any value or price for the good in question?

The second question is, What price are we warranted in assuming, and why?

The third question is, Why is the quantity of goods assumed to be demanded at that price what it is assumed to be? (The same question applies to the quantity supplied.)

The fourth question is, What would the point be, in case there were no bids or offers for any quantity beyond that which sellers find profitable to sell? In this case, the demand schedule lies entirely above the supply schedule; which means that *any* assumed price between the two will equalize the quantity demanded and the quantity supplied, as well as any other.

Such statements as the one quoted, assume value, and reduce price determination to a mechanical process of "higgling" or mathematical ratios.

2. The "Marginal Pairs" ²

If we assume a given quantity in a given market at a given time, and if that commodity be divisible into equal units which are for sale by different competing sellers to different competing buyers, we then arrive at a situation which results in the well-known case of the "marginal pairs". For example, let it be imagined that we are looking at the intersection point of the demand and supply curves in the preceding diagram with a high-powered microscope, as it were, so that the situation existing at the point P is greatly magnified, making small details visible. Under the assumptions just made, we may then expect to find something like the following diagram.

² See Böhm Bawerk, *Positive Theory of Capital*, p. 200ff.; J. A. Hobson, *Economics of Distribution*, Ch. I.

In the accompanying figure, the points B_1 and B_2 are two buyers' bids located on the demand curve, and the two points S_1 and S_2 are two sellers' offers located on the supply curve. It is apparent that the

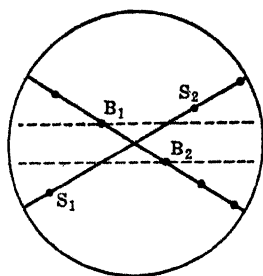


FIG. 11

two curves do not intersect at a point which is occupied by any bid or offer. In this situation, it is further desirable to note that B_1 is the last buyers' bid which is included within the quantity that is exchanged; that is, his bid falls to the left of the line PV in Figure 10. Similarly, B_2 is the first excluded buyers' bid, since it falls just beyond the intersection of the hypothetical demand- and supply-schedules, or to the right of the line PV in the preceding figure. S_1 is the last included sellers' offer, and S_2 is the first excluded sellers' offer.

It then takes but little thought to conclude that the maximum value in the situation here illustrated is determined somewhere between B_1 and S_2 . Obviously, the price could not rise higher than S_2 without bringing in more offers and additional quantities. If the price is higher than B_1 (the bid of the last included buyer), it would result in driving out some demand, and reducing the quantity that buyers would take. Thus we may say that the maximum price is determined by the bid of the last included buyer and the offer of the first excluded seller, whichever is lower. This maximum is indicated by the upper of the two dotted lines.

On the other hand, the minimum value is determined in a similar way by the offer of the last included seller (S_1) and the bid of the first excluded buyer (B_2). Obviously, according to the preceding diagram, if the price is as low as the bid of the first excluded buyer, there will be a larger quantity demanded, which would require the supply quantity furnished by some additional seller. On the other hand, if the price were lower than the offer of the last included seller, S_1 , the quantity supply would be reduced. Thus in this case, the minimum is set by the higher of the two, or B_2 , as is indicated by the lower dotted line in the preceding diagram.

3. Dynamic and Qualitative Aspects

The foregoing discussion is frankly highly abstract. In practice, demand schedules and supply schedules are not so simple or so definite as might be inferred. They change with more or less frequency, and they change both in their general level and in their shape or slope. Furthermore, the quantities of goods that are involved also change, both the total quantities available and the particular quantities exchanged at various prices. It "takes time"! Sometimes before an adjustment or readjustment is completed, a new change is set in motion. Changes which are dynamic, in the sense of being qualitative and giving rise to entirely new conditions, may occur.

It is the existence of this situation which is largely responsible for the economist's emphasis on the distinction between market values and normal values. The attitude taken by the author, and the one which seems to be expedient in economic science, is simply this: We consider conditions as found at any given moment of time, and base our reasoning upon the *tendencies* which arise from those conditions. At any given time, we may ask the question, Whither is the market tending, and have a basis for answering it.

Furthermore, it is a part of the attitude here taken toward the value problem, that we consider the point of view of any individual who is in the market as being subordinate to the total situation. This results in regarding the so-called opportunity costs felt by the individual, and his various subjective exchange valuations, as representing transient attitudes on his part, which lead toward some more fundamental equilibrium—an equilibrium between positive costs and utilities, or negative and positive desires.

Individuals, whether as buyers or as sellers, do make efforts bearing upon the *quantities* of goods "demanded" or *quantities* of goods "supplied". When an individual seller engages in an advertising campaign, or makes some minor alteration in his wares in order to "differentiate" them, he seeks to do what is called in business circles "demand creation". Similarly, the individual seller may adopt any of the various price policies, such as selling regularly

below "market", or as selling regularly at "market plus".³ He concerns himself primarily with the quantities (or "volume", as he will probably call it); but the effectiveness of his operations depends upon the *intensity* of demand, for if they are to succeed, they must influence desires, income distribution, standards of living, margin of consumption, and such fundamental conditions.

When the individual business man concerns himself with the supply of his goods in the sense of a *quantity* supplied, he has in mind efforts to get his competitive "share" of the "volume", assuming the existing price structure. This attitude leads him to efforts to reduce his expenses by various economies, and possibly by securing lower unit costs through a larger scale of operation. This may result in his growth as a competitor, or it may lead to combination, —and possibly to monopoly. Aside from the latter event, the tendency, as it works out through the individual point of view, is toward a larger total quantity of goods made available to society, and toward a lower cost per unit of goods.

Then we find that under the influence of demand-quantity and supply-quantity considerations, individual business men adopt various "price policies". These policies all assume the existence of price, and, indeed, the existence of a particular level of prices. The individual, however, must decide whether he is to maintain the existing price for his product—the origin of which need not concern him—or whether he will seek to get a larger profit by making the "quality" appeal, and charging a higher-than-average price, or by securing a larger physical volume of business through "cut" prices. The net result is that the market is tested. If either those who sell market-plus or those who sell market-minus get the best results, the market itself must be altered. In this way, through their narrow individual points of view, individual business men so act as to bring about a market equilibrium, an equilibrium which tends to establish a level of prices which gives the maximum quantity of profitable exchanges. (And the economist, on the basis of price-determining demand and supply, can *predict* the result.)

Thus the business man's point of view need not conflict with the

³ See A. W. Shaw, *An Approach to Business Problems*, Chap. XV (1916).

point of view of the social scientist. In no case, however, can it be adopted as the basis for social science.

It remains to be added that all this is affected by business combinations and by government interference. Pools and price-maintenance schemes complicate the working of demand and supply forces, and the adjustments between those forces, one of the most persistent tendencies being to establish pooling arrangements which (1) prorate the physical volume of business, and (2) try to keep all those engaged in the business alive, thus preventing the elimination of high-cost producers. Similarly the government, particularly in periods of business recession, is apt to intervene to "stabilize" markets and prevent competitive elimination.

The science of economics, however, while not blind to the existence of the concrete realities of the business man's attitude and government interference, takes the position that an economically correct adjustment between man and his environment (and between the individual and society) involves an equilibrium between human desires and the obstacles to the gratification thereof. Economic science sees the problem of value as the problem of finding out what men consider worth while in view of their desires and the limitations upon desire gratification. Thus even if the idea of a so-called "planned economy" were to prevail, it would be found that the *principle* of equilibrium is the true guide. The technique would be different, and the possibility of attaining maximum net gratification of wants be greatly reduced. The test would be the same.

For example, one of the recurrent social problems which exists on the economic level, is the matter of so-called overproduction. This problem may be appraised separately from the point of view of either ethics or politics or even religion. It may have various aspects. It is the economist's job, however, to see it in its economic aspect. Looked at in this way, he sees that surplus supplies *tend* to cause lower prices, and that lower prices *tend* not only to shut off production, but also to shut it off at the point occupied by the marginal producer, where production is most costly. He sees, moreover, that the lower price tends toward a solution of the problem

by increasing the quantity demanded by various individuals, since at some point or other, the price falls to the level of the existing demand schedule.

The economist, however, must recognize that after he has done his job of analyzing the situation in terms of demand-and-supply conditions, there remains the possibility that a broader social point of view may result in subordinating his findings to other than economic conditions. This idea, while it has its great importance, also has its great danger, in that, as we have seen, the values other than economic value are apt to be decided as qualitative matters, or goals, and thus usually result in the imposition of the will of one individual upon the wills of other individuals, that is, in a dictatorship.⁴

It would be easily possible to spend one's life in studying, and to write volumes about, the dynamic aspects of economics, and the frictions which enter into the markets for goods. No thoughtful person who is familiar with the writings of economists, or has had the opportunity to observe business phenomena, needs to be told that this is the case. Without further discussion, the economist should therefore dismiss the subject with the pro-forma warning that we deal here in a simplified and abstract manner with forces which are, in the concrete, much more complex. The aim is merely to see to it that our abstractions are not such as to prevent the application of our generalizations to the concrete world of reality. We would generalize and abstract up to the limit set by potential usefulness, at the same time avoiding the fatal mistake of assuming conditions that are contrary to fact—that is, assuming conditions which are impossible in fact and therefore in logic.

C. The Level and Shape of Valuation Schedules; "Elasticity"

The problem of value determination is thus seen to reduce to an equilibration between primary demand and supply schedules. Having arrived at some understanding of the bases of such schedules and the manner of their composition, we now note two broad aspects of the adjustment between them. These concern (1) the

⁴ See pages 154-7, 199, 207f.

level of the schedule as a whole, and (2) the shape or slope of the schedule, which is a matter of its elasticity,

1. General Level of Demand and Supply Schedules

As to level, that is, the average height of the buyers' bids or demand prices, regardless of shape, slope, or elasticity, it seems fairly obvious to conclude at once, first, that no price can be above the potential demand schedule which enters into its determination, and that no price can be below the level of the supply schedule.

Furthermore, it can be said that the general level of a demand schedule for any given commodity depends upon two general conditions: (1) the intensity of the desires of the potential buyers, as determined by their wants and the quantity of the commodity possessed by them,—in short, by the composition of their marginal utilities. (2) The other factor is the relation of desire intensities for the given commodity to the desire intensities for other commodities, or the subjective value situation. Thus other goods may be available as substitutes, which would tend to lower the general level of the demand schedule for a given commodity. Similarly, the standard of living and the margin of consumption of the group of individuals whose bids constitute the demand schedule, will affect the general level of that schedule.

A distinct factor under this second head is the purchasing power or the money income of the several individuals, and their tendencies toward spending that income. In 1929 and in 1936, the development of inflation tended to affect the attitude of all men toward spending money, and to raise demand schedules as expressed in terms of currency. (It should be noted, however, that this need not affect the relative values of the several commodities, or their relative importance to man in society.) One of the most pronounced phenomena of business cycles is the general rise of demand schedules for numerous commodities during the boom period, and the equally general decline in the level of such schedules during the recession.

The general level of supply schedules also depends largely upon two conditions: (1) First, come costs, which may be direct, as in the case of labor or saving; or may be indirect, in the shape of

expenses. Costs and expenses are related to uncertainties involved in production, the volume or quantity of output, technical efficiency, organization among the agents of production, and the utilization of natural resources (margin of production). (2) In the second place, an important factor affecting the general level of supply schedules is often the holding power of sellers, or their desire to sell. This may be affected by credit conditions or by sentiments aroused by the observation that a price trend has become established. Again, it should be noted that inflation and the resulting deflation of currency tend to affect all expense costs and some disutility costs, such as the cost of saving.

With reference both to demand and supply schedules, it should be noted that inflation is one of the outstanding factors affecting general levels of the valuation of goods with relation to currency. Inflation works through either fear or hope, as these influence buyers' or sellers' reactions. Fear that the currency will lose its value induces a flight from the currency into objects which rise in price as measured in that currency. Hope that prices will rise, whether mingled with fear that they will fall again or not, leads to optimistic purchase of goods "for the rise". Business cycles may be interpreted in terms of upward or downward shifts in demand and supply schedules—usually demand schedules—which characterize periods of boom, "buyers' strikes", and depression.

In this connection, credit is of major importance. This great institution affects both purchasing power and borrowing power. It thus pertains both to the savings of the past and to the rate of discount for the future. Shifts up or down in the general level of demand schedules and supply schedules are apt to be attended by similar changes in the interest rate and in the volume of loans.

Just as it was pointed out in discussing the determination of demand and supply schedules that "sentiment", which pertains to the will to buy or to sell, is a great factor, so here it should be remembered that the more violent and sweeping shifts in valuation schedules, both demand and supply, are apt to be occasioned by widespread feelings of optimism or pessimism.

The general levels of demand and supply schedules are significant, not only with reference to the changes that occur therein, but also with reference to differences in different geographical areas. It is a matter of common observation that different markets differ in the level of demand intensity. For example, the student of market phenomena will know that in such a great city as New York there is concentrated a large mass of people with tastes for so-called quality merchandise, as well as with relatively large incomes. Thus what merchandisers call "breaking into the market" is a problem that differs in the case of New York City from that of some small town in the Middle West. Similarly, it is probably true that the levels of demand schedules are higher in the United States than in most other countries, a phenomenon not unassociated with the vaunted American standard of living. In these respects, much depends upon the total amount of wealth, its distribution among the different classes of individuals, and their habits of spending or saving.

One way to arrive at a concept of the general level of demand schedules is to recall that certain attempts made by sellers to influence the market for their products are obviously directed to affect all buyers and to raise their general estimation of the product in question. Thus when sellers seek to "differentiate" their products in order to give them a special appeal, or when they seek to advertise their products in a general way to the masses, the idea is to raise the subjective value of the particular good, thereby affecting the level of demand prices of all potential buyers.

2. Shape, or Slope and Elasticity of Schedules

(1) *Elasticity of Demand.* Ordinarily the idea of elasticity of demand is used to describe the extent to which the quantity demanded changes with changes in market price. Thus an "elastic" demand, *in this ordinary use of the term*, is taken to be one in which (1) the quantity of a given good that is actually purchased varies with any change in price, (2) the variation in quantity being in the opposite direction to the price change, and (3) somewhat greater than in proportion thereto. If a decline in market price results in a more

than proportionate increase in the quantity bought, the demand in this sense is said to be an elastic one.

This concept, which regards elasticity as a phenomenon which concerns the individual business man, is subject to criticism in several respects. In the first place, it means a concept of demand which is that taken by an individual buyer without reference to a social point of view. In the second place, and a corollary of the point just mentioned, it means that demand is considered as being price-determined—a result of objective market price rather than a cause. (The prices, in turn, are tacitly assumed to be either those charged by a single individual business under competition, or those charged by a monopoly.) In the third place, it means that there is a mixture of thought as between two different concepts, namely, that of the slope of the demand curve as a whole, and the elasticity of the demand curve at any given point. The concept now under discussion involves a comparison of the changes in two total quantities (the quantity of goods and the price ⁵), and therefore concerns the general slope of the whole demand curve. This concept is probably not to be thought of as elasticity in the strict sense of the term, the latter involving a relation, not between two totals, but between the *rates of change* therein at a given time. This is a corollary of the fact that elasticity in the fundamental sense has to do with the determination of the price or value, and is not a price-determined matter.

The other concept of elasticity, therefore, should be carefully considered. Briefly, it is that elasticity depends upon the shape of the demand schedule, not upon the quantity of goods measured along the OX axis. Elasticity consists in a variation in demand-prices or buyers' bids—in subjective prices which exist before objective value and market price are determined. In this sense, an elastic demand is one in which the demand schedule tends to decline only gradually as the quantity supplied increases. In this statement, no price is assumed; we are dealing only with potential prices or bids, and a schedule of such bids is called elastic, if it be one that de-

⁵ Probably these two "quantities" are not commensurate in the sense required to make this concept of elasticity scientifically valid.

clines less rapidly than an increase in the quantity of goods for sale, so that the bids tend to "hold up", as a business observer might say. Similarly, an inelastic demand is one in which the demand schedule declines with relative sharpness as the quantity for sale increases. If the total quantity offered increases 10 per cent and the bids fall 50 per cent, the demand is distinctly inelastic.

We at once observe that this concept of slope or elasticity is one which considers demand not as a quantity demanded, but as a series or schedule of demand-prices based on desire intensities. Thus considered, the demand does not depend upon price, but is a factor in determining price. Thus considered, too, the demand is one which fits into a social point of view. Accordingly, the concept of elasticity of demand becomes of interest, not merely to a business man, but also to a social scientist who is concerned with causation and determination of value.

It will be observed that in discussing this second concept, the statement here made is that elasticity exists when a demand schedule declines but gradually with relation to an increase in supply quantity. In other words, this statement means that elasticity, in the fundamental sense, refers to a tendency as to the "slope" of a demand curve. It is probably well, however, to make a distinction which mathematical economists have pointed out, namely that between "slope" and "elasticity" proper. Elasticity proper refers to the relation between the *rates of change* in supply quantity and bids or demand prices. It thus concerns relatively small segments of the demand curve, and is significant at any given time⁶ with relation to the determination of a marginal demand price. This concept of elasticity makes allowance for the difference which the level of the demand curve makes in the significance of a given amount of change in the demand intensity at any point on the curve. Thus if the level of the demand curve is high, and at a given point the bid is \$100, a decline of \$1 is only 1 per cent, while obviously if the decline of \$1 occurs at a lower level, where the bid is only \$10, it

⁶ In any strict scientific usage of the concept as a rate of change, the time factor would have to be allowed for. It would concern the amount of change in a given period of time, which would have to be equal in making comparisons.

amounts to a drop of 10 per cent. These differences may occur at different points in the same schedule or curve, which as a whole has a characteristic slope.

The statements concerning elasticity thus far made, therefore, are based on the assumption that within the normal or usual range of the demand schedule there will ordinarily be a fairly close relation between (1) elasticity in the relative-rate-of-change sense and (2) slope. One should not forget, however, that the two concepts are different.

Another point that appears to require brief comment is the idea suggested by Alfred Marshall that it may be well to have a concept of unity in elasticity, or constant elasticity, according to which a schedule would represent unity if the product, total quantity times the price, remains the same. If, for example, bids are high enough to allow the sale of 5 units at \$10 per unit, while 10 units may be sold at \$5 per unit, and 15 units may be disposed of at \$3.333 per unit, the total sales remain \$50, and then the demand schedule represents unity in elasticity.⁷ In this sense, the demand would be elastic if the bids declined less rapidly, so that 10 units could be sold at \$6 per unit, and 15 units at \$4.50 per unit. Of course, an inelastic demand would be described similarly as one which fell off more sharply than "unity". To the author's way of thinking, however, this concept is inexpedient, and inconsistent with the idea of demand as a price-determining factor. To make elasticity of demand in this case depend upon the total volume of sales (quantity times price) is to deal with the total market situation, and not with demand intensity as a distinct element in the determination of price. Moreover, the idea assumes a simple relation between quantity and price such as often does not exist. Often several commodities are interrelated in the market, either on the demand side or the supply side, in which case variations in quantity may have no constant relation to demand intensity or price.

The difference between elasticity as a price-determined characteristic of demand, and elasticity as a price-determining characteristic, is well illustrated by data and statements presented in connection

⁷ If q = quantity, p = price, and c = a constant, the formula is $qp^n = c$.

with a certain discussion of the relative elasticity of demand for agricultural products.⁸ It is stated first that "The demand for apples is more elastic than the demand for potatoes. Before the War, a United States potato crop 20 per cent below normal sold at wholesale in New York City at 48 per cent above normal. A 20 per cent shortage in the apple crop resulted in a 17 per cent advance in the wholesale prices of apples in New York City." Here the reference is obviously to elasticity in terms of a change in price that follows a change in quantity, the change in price reflecting a change in demand intensity. In the very next sentence, however, it is stated that "probably a 10 per cent drop in the price of apples stimulated consumption more than a 10 per cent drop in the price of potatoes". This observation is obviously in terms of the effect which a change in *price* has upon the *quantity* of the good that is consumed—a price-determined elasticity. On the other hand, it is stated that "the price of apples fluctuates more with changes in supply than does the price of bananas", this statement being to the effect that changes in quantity affect the demand-intensity concerning apples in a way to cause wider swings in price than is the case with bananas. Thus we are brought back again to the concept of elasticity as dependent upon changes in quantity antecedent to changes in price, which makes demand-intensity a price-determining factor.

It should be noted further that in the foregoing discussion, the changes in supply quantity are those which come at considerable intervals of time, and that the concept of elasticity which is concerned is that which pertains to the "slope" of the demand curve as a whole. This concept of elasticity is common, and it cannot be said to be unimportant. It concerns the potentiality of the whole market on the demand side, since it involves the whole range of possible buyers. It also concerns the total quantity which may be available. It is this concept of elasticity, so-called, which is in mind when one refers to the demand for automobiles as being elastic, and then illustrates the point by citing figures as to how year after year the number of automobiles produced has increased, while the

⁸ G. F. Warren and F. A. Pearson, *Interrelations of Supply and Price*, Cornell University, March, 1928, Bul. 466, pp. 777-778.

demand curve has fallen only gradually. The thought here is that there are successive layers of potential automobile buyers who may be appealed to in case the manufacturers are able to reduce their offers or supply prices.

But the concept of elasticity proper, to which reference has already been made, does not concern the slope of the curve as a whole, in any immediate or direct way. It concerns the relative rates of change in the quantity for sale and in the bids, *at any given time*. This means that there is involved a given point on the demand curve, and therefore the question of elasticity depends upon the particular level at which the marginal demand price is about to be determined. At that level, the ratio between the rate of change in the bids and the rate of change in the quantity supplied may be quite different from the ratio between the rate of change in the bids and the rate of change in the quantity supplied, as these exist at some other point. Thus elasticity of demand, in the narrow sense of the term, is the sort of elasticity which always directly and immediately concerns the determination of marginal demand prices at any given time, and therefore the determination of value. From the point of view of static theory, and regarding markets as the field for a continuous but ever changing play of demand-and-supply forces, it seems that this concept is the more significant of the two.

(2) *Factors Affecting Elasticity*. In the case of some commodities, it will be found that the demand schedules or curves are ordinarily inelastic; that is, at the point near which demand and supply schedules are in equilibrium, and which represents the usual level of the range within which prices fluctuate, it is found that relatively small increases in the quantity supplied will ordinarily produce relatively sharp declines in demand intensity, with the result that prices also fall with relative sharpness. Such commodities are largely found among those which are thought of as "necessaries", or at least as not being luxuries. Some of the chief factors which explain inelasticity in demand are discussed in the following paragraphs.

Goods for which there are *few unfilled wants*, or in other words,

those for which the wants of most potential buyers are usually gratified, are apt to show inelastic demand schedules. For example, if the quantity of salt be increased, there would be little possibility of finding additional buyers or many unfilled wants, except at relatively sharp reductions in price. This would mean that the demand curve had fallen sharply.

Goods for which there are *few uses*, are apt to have an inelastic demand curve. The case is similar to that just mentioned. Other things being equal, the fewer the uses, the more completely the wants for the commodity may be gratified.

Goods for which there are *no effective substitutes* are apt to be inelastic in demand. Probably, under most circumstances, gasoline is an example. This may be said to follow from the fact that, as is true of salt, they are more likely to be necessities than would be the case if something could take their place. Certainly the demand for any one of the various fuels or of the various textiles is more elastic—and less inelastic—than would be the case but for effective substitutes. When one of these commodities, say coal or silk, becomes scarce, the demand intensity bearing upon it is held down by the existence of substitutes in the shape of fuel oil, or rayon. On the other hand, when they are abundant, the demand for them may hold up, in that there is a possibility of their replacing other commodities. Cottonseed oil and lard are both in demand as frying fats, and even for shortening. If the supply of cottonseed oil be increased in quantity, it can take the place of lard, and so it can benefit to a greater extent from the more intense units of the desires (and presumably the demand) which both products are able to gratify as substitutes.

Goods, the ordinary units of which are *low in cost*, and which take but a small proportion of the average buyer's income, are apt to be inelastic in demand. Often such goods are customarily bought in small amounts and bought regularly. Such cases as postage stamps and streetcar fare may be presented as illustrations. In such cases, substitutes are not apt to be important.

Other things being equal, *durability* tends to become an element in inelasticity. Ordinarily durable goods can be stocked; and, more-

over, the consumer can postpone new purchases by a more extended use of his existing supply of such goods. As a result, demand may fall off sharply.

It is a more or less fortuitous circumstance that the criteria of elasticity have thus been presented in terms of *inelastic* demand. It is just as true that some goods are ordinarily elastic in demand as that those mentioned above are inelastic in demand. The elastic demand goods are apt to include the luxuries. In fact, it seems that in general we may say that in each of the five cases indicated above, the opposite condition characterizes a tendency toward elasticity in demand.

One point which affects elasticity is reserved for final mention, on account of its broad and sweeping character. This is the factor of *equality in wealth distribution*. It seems unquestionable that in a society in which the distribution of wealth and income is substantially equal among the various individuals, the number of demand schedules which would be relatively elastic would be greater than in a society in which distribution is highly unequal. One way of making the idea clear is to point out that in the former society fewer people would be dependent upon bare necessities, or in other words, the distinction between necessities and luxuries would be less sharp, and more goods in the shape of comforts and conveniences would be consumed. Thus changes in quantity would be less apt to have sharp effects on demand schedules. On the other hand, great inequality in wealth distribution, which would result in the existence of many poverty-stricken people living alongside people of great wealth, would almost certainly find the field of inelasticity in demand widened. Among the large group of the poor, a condition of necessity would reign, with inelastic demand schedules prevalent. Or if we look at the two kinds of society broadly as constituting a total market for a given product, it will appear that in the society characterized by equality of income, the chances would be good that one could extend the production and sale of the commodity with only a gradual decline in consumption; while in the other society it would be practically certain that after the desires of the relatively few well-to-do had been gratified, there

would be a sharp drop in sales, which drop would come much sooner than any to be anticipated in the other society.

(3) *Typical Demand Curve Both Elastic and Inelastic.* A typical demand curve—one which would be found in the case of the ordinary commodity under usual circumstances—is one which, in the sense of slope, is neither elastic nor inelastic. Perhaps it would be more accurate to say that such a typical demand curve is both inelastic and elastic. The reason for this statement will be clear when one considers what takes place in the course of a period during which the quantity of the ordinary commodity is largely increased or decreased. Such a case is presented in the accompanying diagram.

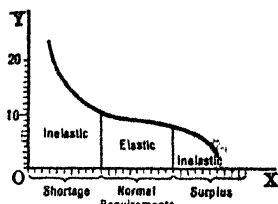


FIG. 12

American cotton may be taken as an illustration. If we begin with an unusually small crop, say one of 5 million bales, there is a condition of abnormal scarcity or shortage. Under such conditions, the intensity of demand will be high, and the bids or demand prices of those who seek to secure part of the limited quantity will rise to high levels, say 25 cents per pound. As the quantity is increased, perhaps by importation or otherwise by increased production, the bids decline as the scarcity is diminished, and the larger quantity must appeal to less intense desires. With a crop sufficient to meet normal requirements, the bids will fall to the general level of 10-12 cents per pound. Such a crop will probably range from 9 million bales to 16 million bales. Within the limits set by this range, the intensity of demand does not vary widely, and may therefore be thought of as lying in a zone of elasticity. Changes of 500,000 bales which occur within this range are not likely to produce a change in bids of as much as a half-cent a pound. When, however, the quantity supplied increases beyond this zone, as a result of crops rising above 16 million bales, we enter a zone of surplus, and as a consequence, bids and prices may be expected to decline sharply. In this surplus zone, accordingly, the demand curve again becomes inelastic.

It is probable that some commodities rarely exist in such quan-

ties as either to fall short of, or to pass beyond, the zone of "normal requirements." In other words, rarely if ever are there shortages or surpluses of such commodities. In such cases, the demand is ordinarily elastic. Vice versa, there are some commodities which frequently are affected by extreme shortages and surpluses, and these are commodities which are apt to show sharp changes in the demand curve—changes which are sharp relatively to the change in the quantity supplied.

(4) *Elasticity of Supply.* The phenomena of elasticity of supply are fully as important as those of elasticity of demand, although they have been formally recognized as a matter of "elasticity" only in recent years. Elasticity of supply concerns the supply schedule or curve, and therefore the selling tendencies of potential sellers, as these are reflected in the offers they may make. It is the rate of change in the marginal supply-price as affected by a change in the quantity for sale.

It follows from the nature of elasticity in general,—depending as it does upon a relation between the quantity of goods in demand or for sale and the attitude of sellers or buyers thereof,—that elasticity of supply is to be thought of only in cases in which the quantity of goods is variable. In other words, *we have no problem of elasticity of supply in those cases in which the quantity of goods for sale is practically fixed.* In these cases, demand is the only active force, and the market tends to equate the demand to the fixed quantity of goods for sale in such a way that the price will be the marginal demand-price for the whole quantity. (Or it may be more fundamental to say that the equilibrium lies in an equalization of marginal desire-utility with marginal gratification-utility.)

(a) *Quantity for sale not related to cost.* The relation of supply-intensity to cost is so important that it seems well at this point to present a brief analysis of the cases in which the quantity of goods is not related to cost. In general, these seem to fall under two broad heads, namely, the goods which are not reproducible and the goods which are at the moment up for forced sale. In more detail, the various cases are as follows:

(i) Not *physically* reproducible. In the case of goods which are

not physically reproducible, the supply quantity being permanently fixed, quantity can not be related to cost. These include land, and unique products of deceased persons.

(ii) Not *economically* reproducible. In the case of goods which are not economically reproducible, because of lack of demand, quantity is not related to cost. These include obsolete goods which are inadequate or out of style, as well as goods which, like shale oil in the United States, can be produced but do not pay.

(iii) Cost not ascertainable. The quantity of goods, the production of which is not controllable with reference to cost, can hardly be related to cost. These include "by-products", which are produced without relation to demand.

(iv) Intermittent and irregular product. The quantity of goods which are not continuously producible, cannot be adjusted to cost. This case is similar to the preceding one, but differs in the respect that the lack of control over the quantity arises from non-economic reasons. The result is that the quantity in these cases may be for a time related to cost, and then again lose the relationship. Such is the case with seasonal products, such as farm crops. A crop being made once a year, the quantity thereof remains substantially fixed until the next season comes. And even then, the quantity and cost per unit, will depend more largely upon uncontrollable weather and insect conditions. Another distinct case is that of fortuitous production, as illustrated by the quantity of gold produced, and to some extent by the quantity of petroleum. In both cases the quantity depends more or less upon chance, and even when the mineral is found, the quantity of the find is highly uncertain.

(v) "*Social control*", non-economic. It may be well to add that in cases of social control over production, which have been frequent enough in certain periods, there need be no relation between cost and the quantity of the good in question.

The foregoing are cases in which, the total supply of the good being fixed—or for other reasons not related to current costs—, the quantity for sale varies because of those variations in the attitudes of the holders of a good which are not cost-determined. Such, for

example, would be the case with old violins, paintings, or stamps, which are bought and sold commercially. In these cases, the sellers have their different, and perhaps varying, ideas about the prices they may get, and the supply schedules have different slopes or shapes accordingly. The schedules or curves are not affected by cost in this case, since the commodities in question are not being produced. They are, however, affected by other elements in the supply schedule, as discussed on pages 250ff., such as sellers' worth judgments, and holding power.

(b) *Quantity for sale related to cost; elasticity of supply as related to cost and expense.* There are other cases, however, in which the quantity produced is variable, and varies because the activity of production varies. In all these cases of variability in producing commodities, cost and expenses are usually the major factor.

If disutility-costs, or expenses as related to such costs, are an important factor in affecting the attitudes of the sellers of a good, and if furthermore, such costs can be known with a certain degree of definiteness, they become the chief factor in determining the elasticity of supply-schedules. The extent to which these requirements are fulfilled, however, differs widely. Let us therefore classify the various cases in which the variations of the quantity of a good produced are related to variations in cost:

- I. QUANTITY FOR SALE INDIRECTLY RELATED TO COST
 - A. Joint Products
 - B. Monopoly
- II. QUANTITY FOR SALE DIRECTLY RELATED TO COST, WITH A DEGREE OF VARIABILITY IN THE COST PER UNIT OF PRODUCT
 - A. Relatively Fixed Total Cost
 - B. Relatively Variable Total Costs

(I)

Joint products, properly speaking, are products which are different in the sense that they are evaluated in different markets, but which are necessarily produced together—that is, jointly. A typical illustration is that of petroleum-refining, in which numerous products are the joint result of refining a barrel of crude oil. In such

cases the expenses are joint, or not directly assignable to any one of the joint products.⁹ In the case of joint products, the sellers' supply prices for any one of the products tend to vary with the intensity of demand, or in other words, according to what the traffic will bear. This is well illustrated by the way in which railway rates are made, as discussed in the chapter dealing with that subject.

In the case of *monopoly*, the quantity of the product is controlled according to the monopolist's tendency to adjust production so as to get the maximum net return. Thus the seller's attitude towards the product is, as it were, mingled with that of the buyer, and at least the quantity for sale will not be determined by a balancing of independent supply-schedules and demand-schedules.

(II)

In the case where the total cost is *relatively fixed*, as the quantity of output increases, the cost per unit decreases. In other words, we find here the case of "increasing returns". Here, too, we come to a case in which the elasticity of the supply schedule may be greatly affected by cost. For example, if an increase in the quantity supplied, brings a relatively small increase or even a decrease in the cost per unit, there will be a strong tendency toward elasticity in the supply schedule. If the buyers are bidding for but a small quantity, each of the sellers may be able to dispose of but a small quantity. Then, if the sellers are producers of the commodity in question, their outputs will be small, and costs per unit will tend to be high. Aside from holding power, sentiment and the like, the sellers' offers, or supply prices, will be higher than if the market were in a position to absorb larger quantities.

If now, a larger quantity be demanded, each seller finds his costs per unit reduced, and therefore tends to make a lower offer. Other things being equal, this has the effect of lowering the whole supply-schedule, and tends to make the marginal supply-price and the

⁹ A by-product is merely an extreme case of joint production, in that one of the joint products is unimportant relatively to the others, and therefore any sales therefrom are credited to the cost of producing the other products.

average supply-price for the larger quantity lower than they otherwise would be. Thus, while the supply schedule always gives a positively inclined curve, it rises less sharply than it would were it not for decreasing unit costs. It is thus more elastic.

The railway and public utility industries are excellent illustrations of this case. Most of the heavy industries in which large quantities of fixed capital are utilized, are also illustrations of diminishing unit cost. In all such cases, the item commonly referred to as "fixed charges" is important. This includes such items as taxes, insurance, and possibly depreciation, which go on regardless of the volume of production. Advertising expenses, too, are often an important element in diminishing cost per unit, since the amount expended for advertising is apt to be much the same for any given period of time, regardless of the number of units which may be sold, and an advertising appropriation which seems very large absolutely, may seem small enough if only the sales are sufficiently increased.

It remains to note that in most cases of increasing returns or diminishing costs, a certain stage is reached in which the tendency of costs to diminish is sharply counteracted by the necessity of expanding plant, or otherwise increasing capacity to produce. This condition may give rise to successive zones of decreasing cost per unit, interrupted by sharp increases; but is likely to be tided over by the accumulation of reserves or by borrowing. In other words, the demand for increased capacity can be foreseen and discounted. More than that, however, there inevitably comes a time when, as the output of an enterprise is increased, a lack of proportionality or effective balance between the limited efficiency of the enterpriser and the increased quantity of the other factors of production employed, becomes manifest, and costs per unit cease to diminish.

In other important cases, we find total cost for the industry, or for any unit of the industry, to be *relatively variable*, in which case two different situations are possible, as follows:

The total cost may increase more rapidly than the total output, with the result that there is an increased cost per unit of product. This gives rise to what is often called "diminishing returns". The

classical illustration is found in agriculture and other extractive industries. Here the one great and sufficient reason lies in the relative limitations on the supply of land, that factor being so important in extractive industries, that increases in labor, capital, and enterprise designed to increase the total output, soon develop a lack of balance with relation to land. As a result, a condition arises which is the opposite of that found in cases of decreasing costs. When the quantity demanded increases, the unit costs of each seller tend to be higher, thus tending to make the curve of supply-prices and the marginal supply-price rise more rapidly than they otherwise would. This tends to give an inelastic supply schedule.

In other cases, however, the total cost may increase approximately in proportion as the output increases, in which event we say that the condition is one of constant cost per unit. This is perhaps the least frequent and important case. It is approximated, however, in those industries in which goods are made by hand, and particularly in cases in which goods are "custom made" on order for individual customers. Probably, too, in the case of several lines of wholesale trade, it is true that within wide limits there is no appreciable change in the cost per unit of business as the volume increases.

(c) *Holding power as related to elasticity of supply.* To the extent that the holding power of the seller is independent of disutility cost or expense cost, it becomes a distinct factor in his offer, or supply price, and one which therefore may affect the shape of the whole supply schedule. Accordingly, the elements which may affect the elasticity of supply through their effect on holding power, are to be noted. Briefly, they are as follows: perishability of product, storability of product, stocks on hand (with relation to shipments and storage capacity), and the seller's subjective worth of money (or other price goods). Probably, for example, if a good is perishable, there will be times when the supply schedule will show great inelasticity, inasmuch as it will be necessary to throw the quantity available on the market, regardless of price. In this case, it may be said that we pass from a market in which the quantity is related to cost, to one in which it is not related to cost; and it might therefore be more accurate to say that, just as the quantity may become an

absolute factor in supply-intensity, because there is no choice,¹⁰ so a supply-schedule which otherwise might be elastic, simply ceases to exist—supply-intensity itself ceases to exist—pressure to sell breaks all resistance to selling.

(d) *Substitutes as related to elasticity of supply.* The existence of substitutes for a good makes the supply-schedule for that good subject to variations which are independent of the supply situation for the particular good in question. Obviously, something may happen to cottonseed oil which will profoundly affect the offers of the sellers of lard, or *vice versa*. On the whole, it seems reasonably clear that just as substitutes often tend toward elasticity on the demand side, so they often tend toward elasticity on the supply side. This would come by moderating the change in supply-price that might attend a change in quantity for sale, if there were no substitute.

(e) *Period of time as related to elasticity of supply.* The promptness of delivery or the remoteness of the delivery date may be a factor affecting the offers of suppliers, and thus the elasticity of the supply-schedule. In general, it is a well-known phenomenon that we observe when we find sellers agreeing to make lower offering prices for remote deliveries, while firmly maintaining quotations for prompt or near-by delivery.

(5) *The General Form or Shape of Supply Curves.* By such considerations as the foregoing, we get a fairly definite concept of an elasticity of supply in the sense of supply-intensity. It is a concept of elasticity as pertaining to the supply-schedule or curve, and depending upon the extent to which supply-prices vary with changes in the quantity available. If, within the area where bids are above offers, the supply-schedule rises with relative sharpness, as the quantity demanded increases, we may say that we have a case of inelastic supply; and *vice versa*.

Probably the typical supply curve is a positive one, and may be drawn in some such shape as in the accompanying chart, the curve SS' representing the author's idea of what is typical; while ss' is as the curve is usually drawn—a historical curve, or time series, of costs.

¹⁰ See above, page 187.

The shape of SS' allows for the fact that the first seller and the first unit of the good in question, are represented by an offer or supply-price which is above zero. In other words, the supply curve starts above the OX axis, and to the right of the OY axis. When only a relatively small quantity of goods can be sold, a variety of conditions may induce sellers to make the minimum offer that is required. The curve's slope is then upward—is positive—because at any given time the sellers' offers or supply-prices become arranged from low to high in an organized market. Moreover, it is also true that, in the long run, a condition of diminishing productivity tends to appear, so that to the extent that costs are a controlling factor in supply-prices, the marginal supply-price is relatively high for large quantities. Finally, we note that there will frequently be a relatively elastic section in a supply curve near the center of the range and to the left, for the reason that the larger part of the quantity supplied ordinarily is found to come from sellers whose costs are neither the highest nor the lowest. Then as the supply schedule turns up, and approaches the maximum, there doubtless comes a point at which the curve becomes more highly inelastic.

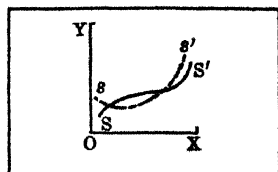


FIG. 13

(6) *Supply Curves vs. Cost Curves.* One point which requires emphasis in this connection is the difference between a cost curve and a supply curve. It is all too frequent, in the textbook literature at least, to find the concept of cost replacing the concept of supply-schedules, and to find in lieu of the concept of elasticity of supply-schedule, a presentation of a curve representing increasing, decreasing, or constant cost. This is confusing, at least, and may be quite erroneous.

In the first place, a "cost curve" is not the same thing as a "curve of costs." Sometimes we find a so-called supply curve presented in the shape of a cost curve drawn as representing the way in which the unit costs in a single industry would move as its output increased or decreased. At any given time, however, the industry would be

operating at some particular point on the cost curve, and it is at such a point that sellers would have to make their offers to sell. To the extent that cost is a factor, therefore, an actual supply-schedule is a curve of costs; meaning a curve on which the various points represent a series of different costs of different sellers. Such a curve exists regardless of how the costs of the individual producers vary as the quantity produced varies.

In the second place, the procedure here criticized confuses costs with sellers' offers to sell. Cost and expense may be but one factor, and at times but a minor one, in determining the offer that a potential seller will make.

In the third place, there is the danger of the dosing-method fallacy, which arises when a cost curve is drawn as if the product were being manufactured by some one large producer, and is then substituted for a market supply-schedule. Such a cost curve is usually shown as first declining as the production increases, and subsequently rising. It is then sometimes shown during the early part of its course as lying above the eventual market price, and a sort of historical loss is set up to cover this period in which costs exceeded price. Such a procedure is obviously of no validity in explaining the determination of value at any given time, and, like other historical or dosing-method surpluses, this negative cost surplus is an unreality.

In the fourth place, however, the distinction between a supply-schedule and a curve of costs, makes it possible to allow for the way in which tendencies to increasing or decreasing unit costs may affect the shape of the supply-schedule, without involving the thinker in any of the errors indicated above. This is roughly illustrated in the accompanying diagram. Here the supply-schedule is represented by the curve SS' , and is determined by the reactions of sellers toward selling at a given time, cost, represented by the dotted line, cc' , being only one element therein. It is often the case, however, that when smaller quantities are demanded, so that all producers are unable to run at that percentage of capacity which represents most efficient production, the unit costs are relatively high. Thus in the area above OQ_1 , cost equals or even exceeds the supply

prices. To simplify the matter, we assume that the quantity OQ_2 represents a range of utilization of productive capacity at which costs run low, and accordingly the sellers' supply-prices do not rise much. If the quantity OQ_3 is required, however, the factor of over-time and pressure on plant capacity results in higher unit costs, and supply prices may be little if any above what is regarded by the seller as covering his costs. Of course, if OQ_4 be produced, we find costs running above the limit set by the demand schedule, and perhaps far in excess of actual selling prices.

(7) *Elasticity of the Market.*

The question now arises, Why not apply the concept of elasticity to the market as a whole, embracing the joint operation of the demand and supply schedules? Since it appears that the demand-schedule and the supply-schedule are both subject to such varying rates of change with reference to the quantity of goods available for exchange that they may be elastic or inelastic, it seems reasonably clear that the values which result may also show characteristic responses to changes in quantity.

The author therefore proposes that whenever static conditions exist, in the sense that no fundamental qualitative changes in market forces are occurring, the concept of elasticity be applied to market prices. Normal value, as it were, will then be a fixed point, while market values, so-called, may fluctuate around that point, in their fluctuations describing a curve or curves which will have characteristics of elasticity or inelasticity.

It would seem that elastic market prices are those which tend to vary little with changes in quantity of goods exchanged. For example, in any case in which a small increase in quantity results in a large decrease in market price, the conclusion would be that the market as a whole is inelastic. This might be due to inelasticity in the demand-schedule or in the supply-schedule. The maximum

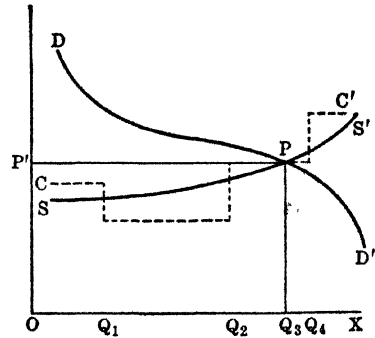


FIG. 14

elasticity in market prices would exist when both demand and supply-schedules are elastic. Similarly, the maximum of inelasticity would exist when both schedules are inelastic. With market elasticity, the general trend of the demand-schedule will be gradually downward, and the general trend of the supply-schedule will be gradually upward. In the neighborhood of the point of intersection, there will be a considerable area in which the difference between bids and offers will be very small, the two schedules being nearly coincident. Under such circumstances, therefore, there will be a wide range within which the quantity supplied may vary without effecting any appreciable difference in price. Incidentally, this is a condition which reflects the state of market affairs usually described by economists as representing "perfect competition". On the other hand, it is obvious that with demand and supply curves intersecting at an obtuse angle, both being inclined sharply in their characteristic directions, a small change in the quantity will produce a condition of great disequilibrium, and probably result in wide fluctuations in price.

D. *The Law of Supply and Demand*

It should now be possible to state formally the principle or law which governs the determination of objective economic values, and consequently—under competition—the prices paid for goods. In the light of the foregoing discussion, such a law may be formulated as follows:

The value of an economic good in a given market tends to be fixed at a point where the marginal demand price and the marginal supply price are approximately equal, and the quantity exchanged generally has the largest possible total value.

A little reflection upon the detailed discussion which has preceded this formulation, and some inspection of the graph on page 303, will suffice to make the statement of the case nearly self-evident. A small increase in the quantity to be exchanged, beyond the point at which marginal supply and demand prices are equalized, must lead to a condition in which the marginal supply-price will be *above* the marginal demand-price. This, however, is a condition

which cannot endure, and which represents economic disequilibrium. Sellers are not satisfied and will, to the best of their ability, reduce the quantity for sale. On the other hand, a small decrease in the quantity to be exchanged, bringing the quantity to a point less than that which corresponds with equilibrated marginal demand and supply prices, means that the marginal supply-price for the smaller quantity will be lower than the marginal demand-price. Under such circumstances, sellers are bound to be more than satisfied, and are affected by a desire to increase their sales. Such a condition is one of disequilibrium. In short, only at the point indicated, are sellers' and buyers' subjective valuations such that it is impossible to suggest any change which would make things seem more worth while to all those who are involved in the market.

Another way of putting this idea, and one which gives the reason for the latter part of the statement of the law proposed above, is to note that the value arrived at by free expression of choices among buyers and sellers is one which tends to be fixed at the point where the total value of the quantity exchanged is at a maximum.¹¹ In other words, at the point of equilibrium between demand and supply, the quantity exchanged, OV , if multiplied by the price which represents exchange value, gives a product which is larger than could be obtained in any other way under the given conditions of supply and demand intensity.¹² The area $OVPP'$ is larger than any other area within the limit set by the demand schedule, such as the area $OQ_1p_1p_2$, or $OQ_2p_3p_4$.¹³

It will, of course, be noted that no price can exist above the limit set by the demand schedule.

It will also be noted that the quantity demanded at any point, whether V , Q_1 , or Q_2 , is equal to the quantity supplied at that point. More than that, however, on the assumption that the commodity is one which is producible, the quantity supplied in the

¹¹ This assumes that the demand-schedule is regular in shape, in the sense that it does not slant upward more sharply from the point of equilibrium with the supply-schedule than it slants downward to the right of that point.

¹² *Ibid.*

¹³ Cf. Fig. 10, p. 303.

long run is limited by expenses and the necessity of making it worth while to producers to produce. The quantity of any producible commodity or service, therefore, is adjusted by the relation existing between demand and supply schedules, so that it tends toward the point at which the total quantity will be *the maximum volume of profitable exchanges*. Individual sellers will tend to get goods for sale, whether by production or purchase, as long as they find the intensity of their desires and wills to sell exceeded by the intensity of the buyers' demand, and *vice versa*.

This is the economic justification of the price system. It is the justification which is aimed at by those who talk about "the greatest good of the greatest number." It is, however, a justification which involves no suggestion of hedonism, or any ethical implications. In fact, it should be noted that the emphasis is laid upon the fact that there is presented here only an economic justification of competition and the price system. The reasoning would not be controlling if political values or ethical values or stark necessity (absolute values) were to outweigh economic choices.

1. Temporary Equilibria Between Demand and Supply, with Large and Small Quantities

In developing the theory of value determination, a point which naturally presents difficulties arises from the fact that *demand-and-supply conditions may be essentially different* under different circumstances as to the quantity for sale. For example, when (1) the quantity for sale exceeds that which corresponds to the equilibrium point, circumstances are different from what they are when (2) the quantity is less than sufficient to allow equilibrium.

When a "surplus" exists as a result of over-supply, and the quantity on the market exceeds that which would have the maximum total sales value, the value is found to follow the line of the demand schedule. It cannot rise above that line, for there are no buyers' bids available outside the area bounded by the demand curve, and sellers whose resistance to selling tends to hold prices above the level of the demand curve will surely not sell for less than the buyers are willing and able to pay. In other words, in

terms of the graph on page 303, if the quantity exceeds that designated by OV, the price tends to fall on the line DD', somewhere between P and D'.

If, however, the quantity on the market is less than that which would have the maximum total sales value, what can be said as to the point or points at which value equilibria may occur? At first, it seems that all that can be said is that the price will tend to fall somewhere between the demand and supply schedules. With the quantity OQ_1 , the price cannot be below a point on the supply schedule determined by erecting a perpendicular at Q_1 , nor can it be higher than a point similarly determined on the demand curve. But where will the price tend to lie between those widely different possibilities?

The author's studies have led him to the conclusion that in that market condition in which buyers are willing and able to pay more than sellers are willing and able to take, the tendency is toward the establishment of temporary equilibria, which conform to the formula $P = \sqrt{D_i \times S_r}$. (Here the term, D_i , is used to indicate "demand intensity," or the marginal demand-price for the quantity under consideration; and the term S_r to indicate "supply resistance", or the marginal supply-price for the same quantity.) This formula is based upon the fact that any tendency of P (price) to rise, will be in proportion to the spread between the demand curve and the price, or $\frac{D_i}{P}$. Similarly, it assumes that any tendency

of price to fall toward the lower limit of the supply schedule will be represented by the fraction $\frac{P}{S_r}$. Accordingly, any equilibrium

within the area bounded by DP and SP will be a composition of these two tendencies. Equilibrium, under this condition, will therefore be represented by the equation $\frac{D_i}{P} = \frac{P}{S_r}$. It is, then, a mat-

ter of very simple mathematics, or common-sense deduction, to derive the formula $P = \sqrt{D_i \times S_r}$. This formula enables us to locate the path that the price will tend to take within the area now under discussion, as the quantity varies between O and V.

Something of the significance of this formula comes to light when

one notes how it differs from a simple arithmetic average between corresponding points on the demand and supply schedules. For example, a point half way between the demand and supply schedules, which would be the arithmetic average, would mean that under no circumstances could the price either fall to zero or rise to an indefinitely high point. Furthermore, the arithmetic average would give identical prices under widely different circumstances. For example, if the demand-price and the supply-price were both \$5, the arithmetic average would also be \$5; similarly, if the demand price were \$9 and the supply price were \$1, the arithmetic average would again be \$5. In the second case, however, the geometric average, or $\sqrt{Di \times Sr}$, would be \$3.

Similarly, if the supply-price were zero, the potential seller having no objection to giving his commodity away, and if the demand price were \$9, the arithmetic average would be \$4½. This represents an unlikely situation; and certainly is one which could not be counted upon. The tendency would be to have the good in question become a free good, having no value, and this tendency finds expression in the geometric average, according to which 9×0 is 0, and therefore $\sqrt{Di \times Sr} = 0$. Similarly, if there were no demand for a good, which is held by some would-be seller at a supply price which may be represented by the figure 9, the concept of the arithmetic average would again give us a price of 4½. The fact is, however, that, there being no demand, there could be no value, and therefore the geometric average expresses the truth in that once more $\sqrt{9 \times 0} = 0$.

Whenever the level of buyers' bids does not vary in proportion to the quantity of goods for sale, the relation between the bids and offers can be expressed only in some way similar to the geometric mean. For example, suppose that a small number of units is desired at a high level of demand-prices, while a considerably larger number of units is available for sale at a low level of supply-prices, the quantity for sale being greater than the quantity which is demanded at the high demand-price. The market price which results will certainly be nearer to the level of the offers than to the bids.

The competition among the sellers would insure this result; and even if there were no competition, a single seller would be at a disadvantage in bargaining.

With the foregoing explanation of the determination of value in mind, it is easy to analyze the results that follow the attempt to maintain an artificially high price level. In the first place, it will be agreed that there will be a decrease in the quantity demanded, but why? The answer is now clear, namely, the quantity demanded decreases because the demand schedule (the level and shape of the demand curve) remains unchanged. It is the intensity of demand that determines. Only when the price is fixed above a level where there would be equilibrium between demand and supply schedules, does it necessarily follow that the quantity demanded will be reduced. Then, in order that the fixed price may lie within the bounds set by the demand-schedule, it becomes necessary that a smaller quantity of goods be exchanged. As a result, the volume of profitable exchanges is less than it could be, and the total value of the quantity exchanged is reduced.

It is also at once admitted that when an artificially high price is fixed, the tendency is for the quantity supplied to increase. Again, however, there remains the question, Why? Again, the answer is that the price is then so far above the supply-schedule, or the level of potential sellers' offers, that it is worth while for the sellers to increase their supplies, if this be possible. If they are producers, they tend to expand their outputs. In any case, they become more eager to sell, and thus their resistance to selling is reduced.

In general, it may be said that it is not price alone that affects the quantity demanded and the quantity supplied; it is the relation of price to demand-schedules and supply-schedules. It is the relation of price to subjective values and costs.

2. Possibility of Forecasting Prices

One advantage of the theory of value determination when worked out in a consistent way, is that it enables one to explain market phenomena, and even to forecast market results. This does

not seem to be the place to enter into any extended demonstration of the possibilities in this respect. It may be well, however, to go so far as to indicate something of the general procedure. For example, if in a given market one finds the price of a commodity has dropped sharply, and if, furthermore, the quantity of the commodity available remains substantially unchanged, one may draw the definite conclusion that there has probably been a drop in the general level of the demand schedule. Such a phenomenon could be explained only in terms of a so-called "buyers' strike", or a bear panic among sellers, or possibly a sharp deflation affecting currency. Since these phenomena are all of a sort to be readily observed, the true explanation can be ascertained with reasonable certainty.

Again, if in a given market we find that the quantity of goods for sale increases, and goes beyond the quantity which on previous occasions has been attended by a break in prices, but that this time the price holds up without material recession, we may draw some definite inferences. It must be apparent that either the level of the demand schedule has been raised, or the level of the supply schedule has been raised (so that more goods are held off the market), or both. The only possible alternative seems to be that something may have developed which has not changed the general level of the demand schedule, but has increased the elasticity of demand. This might be the result of the development of new uses for the product, or the "education" of more people to desire it.

For further discussion of such matters, the reader is referred to the author's work on business forecasting.¹⁴

E. "Normal" Value

One of the oldest and most persistent distinctions which is to be found in the literature of economic thought is that which is drawn between a sort of value which is relatively fixed or stable, and another sort which is relatively variable and fluctuating. Not infrequently—perhaps usually—there is associated with this distinction a tendency to regard the one as being better or more nearly "right" than the other.

¹⁴ Haney, *Business Forecasting*, Chap. VIII (Ginn & Co., 1931).

In the thought of Aristotle, we find a distinction between a value which is "natural" in that it is supposed to represent the wants, needs, or uses for the given object; while the other is unnatural, since it merely represents an exchange ratio or a quantity of money paid.

As time went on, however, the prevailing tendency came to be to draw an analogous distinction on the basis of cost rather than use or utility. In other words, those values were called "natural" which had some definite relation to cost; and those were "market values" (not necessarily unnatural) which had no necessary relation to cost, but merely represented the fluctuating rates of exchange of the moment.

There appears to have been a persistent tendency in men's minds to seek something in the nature of an "absolute" value, or at least to seek a fixed standard of value. Such an absolute value or fixed standard would readily take on an ethical significance, and seem to be more nearly "natural" or right than any other. As already suggested, the tendency seems to have been to shift from the standard of utility or usefulness to one of cost.

The older Classical economists thought always of a tendency toward some minimum which would be determined by cost. They reasoned or assumed that the value of a good could not long be below the cost of its production. Thus it seemed "natural" that value should come to equal cost. The naturalness of such a level of value doubtless rested upon the assumption that population tends to multiply to a point where further multiplication becomes impossible on account of lack of subsistence. Such a tendency would result in setting a fixed minimum, below which prices could not go. If the utility of the good, or its "value in use", be assumed—as was generally the case—there would thus be an assumption that demand is always present. The early economists always dealt with totals or averages, so that their reasoning could not readily be checked by the test of the margin, and it might not correspond to any reality. They eliminated from their consideration all non-producible goods, thus confining their discussion to those which were affected by cost. Finally, by taking the entrepreneur point of view, and

considering "expenses" as being the equivalent of costs, they seemed to make their minimum a definite thing. Of course, the problem of joint cost was not as important as it has since become, and in any case, was not taken into consideration.

All this earlier procedure, which not only is based upon many questionable assumptions, but also results in the conclusion that normal or natural value is determined by cost of production, is demonstrably onesided and erroneous.

To begin with, cost is not a fixed thing; cost itself has to be determined. This becomes especially clear when we come to cases in which costs per unit vary with the volume of production. In cases of increasing cost, or diminishing returns, for example, we are forced to consider the concept of a marginal cost and differentials. The question now arises, Which cost is effective, or in other words, Where does the margin lie? It is marginal cost that counts. But margins have to be found! They vary, and their locus is by no means certain. Nor is the method of determining them unanimously agreed upon by leading economists.

In the case of increasing returns, or diminishing cost, too, it is at once obvious that the economist cannot escape a recognition of the fact that, in a sense, demand determines cost. This is true only "in a sense"; but is sufficiently significant to demonstrate that cost cannot be the sole price determinant. In fact, it is probably just as true, if not equally important, to say that cost is determined by value, as it is to say that value is determined by cost.

Again, a little reflection reminds one that cost is not the simple phenomenon that it was assumed to be. (1) Careful thinkers draw a sharp distinction between "cost" and "expense"—disutility-cost and expense-cost—, recognizing that expenses, while they may be related to costs, can in no sense be considered as equal thereto, since expenses are influenced by numerous factors pertaining to other goods than the one in question, as well as the value of money. (2) Then, too, there is a difference between total or average cost, and the cost of the marginal producer. (3) Finally, there is a difference between the average cost per unit of the given good, and the cost per marginal unit. Which of these concepts of cost is in the

mind of an economist who says that normal value is determined by cost?

In the last analysis, the problem of economic value is one of equilibrium between two variables. The work of psychologists is still so imperfect that it is difficult to express the nature of these two variables in any simple way, as by the use of a given word. Perhaps we come near enough to doing so, however, when we say that the problem is one of equilibrating "utility" and "cost". Perhaps it would be better to say that the matter involves an equilibrium between positive desires and negative desires, or "desires" and "aversions". At least, it has been possible to develop the essentials of an economic science around such a terminology, and while numerous errors of interpretation have sprung up and been corrected—and while uncertainties and limitations still exist—this duality remains. It evidently corresponds to two realities which are interrelated, and which require adjustment. It may be that the two are analogous to positive and negative electricity.

One thing is clear, and that is that it would be as true to say that marginal utility determines value as it would be to say that cost determines value. Either statement is equally inadequate.

Now the question arises, What, then, is to become of the idea of a natural or normal value which tends to equal or coincide with "cost"? Probably the most recent important and influential attempt to develop the cost basis for a concept of normal value is that made by Alfred Marshall.¹⁵ A brief examination of that attempt follows.

As nearly as the author has been able to piece together Marshall's thought in this matter, it is as follows: "Normal" is taken to mean any condition which is according to the working of law. In other words, a normal value is one which results from a given set of conditions, which are regarded as "forces", and which are allowed sufficient operating time to enable the "result" to become definitely established. It is further assumed that no disturbing or counter-acting condition will be introduced during the process. Such a line of thought, however, does not seem necessarily to lead to the con-

¹⁵ *Principles of Economics*, 8th Ed., pp. 33-36, 341-344, 363-380.

clusion that the working of economic forces will cause an equilibrium which is determined by cost. In fact, it does not seem to follow that cost has anything more to do with the matter than does utility. Marshall himself refers to the forces of supply and demand as being the two blades of a pair of scissors; or, again, as the two sides of an arch, the keystone of which is value.

Yet, for reasons which are not entirely clear, he none-the-less holds it significant to state that there is a "tendency" or value to coincide with cost, or even to "depend" upon cost. This is much as if one were to assert that when one blade of the scissors is fastened in a fixed position its particular cutting edge functions differently from the edge of the other blade. One might as truly argue that there is a tendency for cost to coincide with and depend upon value.

It will be noted that there is a difference between a normal *tendency* and a normal *result*. A normal tendency may exist without any assumption as to the necessity that it lie in the direction of any particular quantitative result. It may be considered as a tendency toward *some* equilibrium, but not necessarily toward any equilibrium in particular. On the other hand, a normal result appears to involve the idea of some point or quantity toward which forces (which may be called normal tendencies) are tending. Surely if "normal value" as a result, is merely any value resulting from the undisturbed working of given forces over any period of time, it is nothing definite. Perhaps it is merely the statistician's long-term trend of "market values".

And, incidentally, we should be aware that mere length of time cannot be a test of normal. If, for example, we assume normal to be a result that works out in a long while, we also have to assume that certain forces are "disturbing forces", and that the remaining forces are "normal" tendencies. Otherwise, there is no assurance that the mere passage of time will bring us any nearer to normal in any sense of equilibrium. But in making this assumption, we are begging our question.

Or if a normal condition be taken to mean one that can endure, how do we know what will endure, or why?

1. Cost and Normal Value

Probably this vagueness in the concept of the norm, or the meaning of normal—perhaps accompanied by the influence of preceding Classical thought—is responsible for the tendency which we find in Marshall to hold to the idea that the equilibrium, in some way or another, has a special relation to cost. It is therefore desirable to inquire in what way cost actually does bear upon value. What is the extent of the influence of cost upon value, insofar as it can be gathered by observation and an understanding of the realities of market phenomena?

It seems reasonably clear that there are two general ways in which cost affects the determination of value:¹⁶ (1) cost may directly affect the tendencies of sellers, and thus the supply schedule. (2) Cost may indirectly affect the quantity of goods for sale, either as a total available, or as a quantity immediately pressing for sale.

In the first case, the point is that the attitude of the seller of a good is bound to be influenced by the amount of cost which he has incurred in order to produce or possess the good. This is true, whether we refer to disutility cost or to expense cost. Say, for example, that I have put in a year's work in producing some good. Does that fact not restrain me from giving it away? Does it not influence me to demand in exchange for it, something which will seem to me to be compensatory for the year's work? Say there are two goods for sale, and say further that they are offered in exactly the same quantity, and that they are wanted by the same group of buyers with approximately the same intensity of desire. Will they then sell for the same price? Probably not, if one of the goods has *cost* twice as much as the other; for in this case, the seller will be more loathe to sell, and will offer more "supply resistance".

The author would emphasize the conclusion that it is clearly not true that the only way in which cost affects value is through scarcity. *Cost affects value by affecting the valuation by sellers of goods, as well as by affecting the quantity of goods for sale.* This direct effect on the supply schedule exists regardless of the quantity of supply.

¹⁶ Cf. above, pp. 252ff.

In the second place, however, it is true that indirectly the cost does affect the quantity of a good for sale, and thus the degree of scarcity. In this case, however, the effect of cost on value or price is very indirect. Usually it works through a comparison between desire and cost, and the cost is only one element in two complex opposing forces, both of which play their part in the resulting equilibrium. Both forces, and perhaps the *net* advantage, motivate the individual. Clearly, if we assume the profit motive to have any effect, we must agree that when costs enter into the determination of a seller's offer (and that offer is above any bid), the result will be a tendency to reduce the quantity for sale. Similarly, if the offers, influenced by costs, are lower than the bids, there will be a tendency to stimulate production.

There emerges out of all this discussion of normal value *vs.* market value, one primary point, which is that an essential aspect of "normal" is equilibrium. It is not necessary that "market values" be assumed to represent the individual or entrepreneur point of view, or that value be taken for granted and demand and supply be treated as price-determined quantities. The equilibrium approach means that *normal value is assumed to be the result of causal forces which work toward a condition in the shape of a "result", which may be described as representing the balance among the forces, or an equilibrium level which could be maintained indefinitely—a static equilibrium.* Such a balance might either constitute an unchanging level, or it might represent a regular rate of change, and be described as a "normal trend".¹⁷ The two classes of value are not to be thought of as determined by different kinds of forces, but as lying in different parts of the field affected by the same value-determining "forces".

Whatever be the concept of "equilibrium", however, it seems to be but a first approach to a solution of the problem of the economic normal. In other words, must the economist think of any and every equilibrium as being normal? May he not, on the contrary, go further, and ask which equilibria are the normal ones? What is a "normal equilibrium"?

¹⁷ Note that this would still be "static". Cf. above, pp. 70-72.

It seems that unless economics does develop a more positive concept of "normal" than that which is involved in the concept of "usual", or of being characteristic of *any* given set of conditions, it will not be able to maintain its integrity as a science. This is true particularly because of its relationship to other so-called social sciences. Not only, therefore, must we conceive of social phenomena as being subject to the influence of "forces", but we must consider those forces to be of a certain sort. They must be capable of equilibration, which means that they cannot be arbitrary or random. Again, they must be such as necessarily tend toward equilibrium, for only thus can we develop the concept of laws in the sense of tendencies. We know without fundamental analysis that human desires and aversions constitute one kind of force, and that environmental conditions pertaining to the materials and forces of nature constitute another sort of force. Unless, however, we consider man himself to be a certain sort of creature, and further consider him to have a certain sort of relation to his environment, our analysis will not reveal "forces" of the sort which enable us to have any definite concept of normal. In short, it seems that the concept of "normal" (results) must depend chiefly upon the concept of "normal forces" (causes).

Perhaps here, as elsewhere, some light is to be gained by asking, What about an isolated individual? What would be normal for Robinson Crusoe? He does not have to consider other persons; but as a living human organism he will consider his future, and he will consider various adjustments between himself and his physical environment. He will be motivated by positive desires to do some things, and by negative desires or aversions toward other things. He will tend to do what he desires to do, to the extent that he is not prevented by seeking to avoid what he does not desire to do. In short, we get the concept of a balancing of utility against costs. The utility concept, in its turn, involves a balancing between positive desires and gratifications; while the costs involve a balancing between negative desires or aversions and dissatisfactions.

If this general thought be taken as a basis, it seems that individuals in society may be regarded as acting normally under similar

circumstances, the chief difference being that what they desire and do not desire may differ from the desires and not-desires of an isolated individual, and in other ways the relationship of the individual to society becomes a factor. The nature of society has to be considered.

At this point, it seems essential to recognize that we come to a parting of the ways. If the society is based upon democratic processes, with individual initiative a prevalent condition, the general test of normal equilibrium will lie in the idea of a competitive process, a majority rule, greatest good of the greatest number, generally recognized value, etc. The objective test of free exchange in markets is the economic analogue of majority rule or the democratic process in politics. It seems to require the prevention of artificial monopoly, and the establishment of an equal opportunity for individuals to express themselves, in the sense of showing what they can do as producers in order to get what they desire as consumers.

At this point, too, the claims of those who argue that economics must become an economics of "monopolistic competition" again requires mention.¹⁸ While recognizing that there can be no assumption of perfect competition as an actually existing condition, we here take the position that the assumption of competition is a useful and valid hypothesis for the purposes of economic theory. Probably the most important point at the present stage of economic thought is found in the conclusion that for the purposes of economic theory we do not need to regard competition as being "perfect"; in other words, we do not need to become too abstract. We can begin by setting aside that part of the field of economic life in which legal and natural monopolies exist. Then we can proceed to work in the balance of the field on the reasonable assumption that competition exists *to a decisive extent*, and that it varies in degree from time to time and place to place, so that we can measure it and correlate it with economic results. It will be noted that monopolies other than those which are "natural" or "legal", can be eliminated; also that the various "imperfections" in competition, such as arise

¹⁸ Cf. above, pp. 144ff.

from ignorance, custom, and the like, can be minimized or be thought of as tending to disappear.

Within the field of so-called monopolistic competition, there are wide variations. For example, we can find in the field some industrial operations which are "naturally" complete monopolies (certain utilities and limited natural resources); we can find some which are "naturally" partial monopolies, which is a common condition (railways); we can find some in which competition is an important force, but is "imperfect" to a high degree; we can find others in which competition exists, and is imperfect only to a low degree. Probably the last named field is the typical case in mercantile and industrial business. A realization of this condition in practice helps one to realize the justification for accepting the existence of an important degree of competition as the basis for economic theory. It also indicates, however, the desirability of analyzing the problem of value as it arises in an industry in which competition is more limited than usual. Such an industry is found in the case of railway transportation, and the following chapter will be devoted to the determination of railway rates, regarded as prices of transport service. (Incidentally, a brief discussion of the theory of monopoly price will be presented.)

Assuming competition, then, the concept of normal value appears to depend upon three tests:

First, there must be an equilibration of marginal demand-price with marginal supply-price, in order that any exchange may occur on the basis of objective value.

Second, there must ordinarily be a maximum value, in the sense that the largest volume of goods may be exchanged which is possible at a price which seems worth while—in other words, a maximum total "sales" (quantity exchanged times price). The second test is significant in that it means that both buyers' surpluses and sellers' surpluses will be at a maximum. (See Figure 10, p. 303.)

Third, there must be an approximation to the maximum net gratification-utility after allowance for costs. This means that both producers' surplus and consumers' surplus will be at the maximum. (It will be recalled that buyers' surpluses and sellers' surpluses,

being measured in terms of price-goods or money, are not necessarily the equivalents of producers' and consumers' surpluses, which are measured in terms of psychic income.)

If the other road be taken, it will be found that autocracy and collectivism are normal, and thus there will be no basis for the sort of objective values which prevail in the type of society just considered. It is interesting to reflect that in this case, individuals will still possess instincts and organic wants, that natural materials and forces will still exist and be limited in supply, that different limitations of space and time will obtain, and that both men and objects will present themselves as differential series of different units. In short, such realities as individual desires, differences among individuals, costs, and natural scarcities will exist at the same time that ideals are placed in control.

It seems almost self-evident that the eventual outcome in such a society would necessarily be that the leader or leaders would be compelled to resort to some substitute for the processes described as being normal for the democratic society. Experience would eventually drive them to seek to obtain the best results for their peoples by approximating the same bases of judgment and tests as obtain in the competitive economy. To put the matter in a nutshell, a price fixer will eventually find that the best way to fix prices is to fix them as they would be fixed in a competitive market.

2. Summary

In brief summary, it has been pointed out how the concept of "normal" has evolved from the notion of an absolute value, which would be "natural" in the sense that it might either be "fixed" by authority or be the result of a law of nature. There developed a tendency to regard cost as the basis for such a concept. Now it is here proposed to abandon the attempt to make "normal" depend upon any single condition, and to consider it as an equilibrium of all social forces which determine value. Thus economic thought about value will have passed from divine authority, through political authority, first to a "natural" law of labor cost, then to a "normal" equilibrium resting upon cost of production, and finally

to mere equilibrium between the forces of positive desire (marginal utility) and negative desire (marginal cost). The conclusion here reached is that the concept of normal value centers in the concept of normal demand and supply schedules. In the first place, these require that, on the one hand, demand be based on individual desires; and that, on the other hand, supply be based on expenses *and* costs, together with conditions of natural scarcity. But to be "normal" the desires of all must play a part in the result, and costs must be counted—all according to a social accountancy which recognizes the long run and the interrelations of individual activities. Such schedules give us normal in the sense of a normal *tendency*. In the second place, the concept of normal requires the equilibration of these normal demand and supply schedules. This involves the maximization, immediately of buyers' and sellers' surpluses, but fundamentally of producers' and consumers' surpluses. This is the normal *result*.

Chapter VII

PRICES OR RATES UNDER "MONOPOLISTIC COMPETITION"; THE THEORY OF RAILWAY RATES¹

Since prices are often determined or fixed in cases in which competition is incomplete or mixed with monopoly, it is desirable to consider a case of "imperfect competition" or "monopolistic competition". The determination of railway rates affords an important illustration.²

Thus far, the determination of value has been considered only under competitive conditions. We have assumed either complete

¹ With minor adaptations, this is the theory as stated in the author's *Business of Railway Transportation* (New York, 1924), originally published by Ronald Press. For further discussion see:

H. G. Brown, *Transportation Rates and their Regulation* (1925); "The Basis of Rate-Making", *Yale Rev.*, 1907.

J. B. Clark, *Essentials of Economic Theory* (1907), Chaps. 23-24.

J. M. Clark, *Economics of Overhead Costs* (1923).

S. Daggett, *Principles of Inland Transportation* (1931).

W. M. Daniels, *The Price of Transportation Service* (1932).

M. B. Hammond, *Railway Rate Theories of the Interstate Commerce Commission* (1911).

L. H. Haney, *The Business of Railway Transportation* (1924), Chaps. XI-XVII; "Joint Costs with Especial Regard to Railways", *Q.J.E.*, XXX (1916).

W. Z. Ripley, *Railroads, Rates and Regulation* (1912).

I. L. Scharfman, *The American Railroad Problem* (1921).

F. W. Taussig, "A Contribution to the Theory of Railway Rates", *Q.J.E.*, V, 1891; XXVII, 1913.

Vanderblue and Burgess, *Railroads* (1923).

S. C. Williams, *The Economics of Railway Transport* (1910).

² Although not usually discussed in this connection, the theory of "monopolistic competition" as developed by Chamberlin, Robinson, *et al.*, applies to railway rates. Railway services are always "differentiated", and are bought by shippers with considerable attention to features other than the price or rate. There is no better illustration of "oligopoly"; and rarely does a shipper confront less than two or more than six alternative railways. "Stabilization" and "administered prices" are prevalent, a condition which is almost necessary where both "joint" and "diminishing" costs are as important as they are in the railway business. At the same time, a large element of competition affects railway rates and the prices of transport service.

competition (ordinarily referred to as "perfect competition"), or a degree of competition sufficient to be a decisive element in the determination. In short, we have dealt with the problem under conditions in which competition is at least possible, and in which there is *no tendency toward a predominance of monopoly*.

In this connection, the attempt to develop a theory of value under a condition of so-called "monopolistic competition" has been noted (pp. 132 ff., 144 ff.), and the conclusion that this attempt is unsatisfactory and does not deal with fundamental forces, has been reached. The gist of the matter is that where the condition is not one of monopoly, the question is one of allowing for different degrees of completeness in competition, thus making the main problem in theory center on competitively determined values.

Of course, there are some industries in which it can not be said that there is no tendency to a predominance of monopoly. In some cases, we find a tendency toward a large degree of monopoly, or, in other words, a condition in which complete competition will not work. Such an industry may be called one of competitive monopoly, or imperfect monopoly. It is illustrated by railway transport. This is often referred to as a "natural monopoly"; but that is misleading if it be taken to imply a naturally *complete* monopoly. The fact is that, while the railway business normally shows less complete competition than many others, it is nevertheless affected by a considerable amount of competition. All that can be said is that the mixture of monopoly tends to be large.

With such cases, the theory of competitive economic value is concerned in two ways:

First, it contributes toward an analysis of the forces and conditions which helps us to understand the tendencies at work. Thus we can treat railway rates as a problem in imperfect or monopolistic competition, and incidentally can inquire more effectively what can be done to increase the degree of competition, or what specific regulations are required to make the rules of the game conducive to economic equilibrium.

Second, economics enables us to evaluate from the social point of view, and thus with some degree of objectivity, the total service

performed by the partially monopolistic industry; and, accordingly, to determine what plant, equipment, and labor force are economically worth while. This aspect is involved in "regulating" prices or rates, and return on investment.

RAILWAY TRANSPORT A NATURAL PARTIAL MONOPOLY

In approaching the value of railway transport, it is desirable first to classify this service with reference to the degree of competition which exists in the market for it. In making such a classification, we find that the factor of route, or limited location, is of paramount importance. The initial investment required is very large and highly specialized in form. Largely because of joint expenses, the relation between operating expenses and the rates or prices charged for the service, is small. The social obligations assumed by a "common carrier" are continuous. For these reasons, the competitive "fitness" of the organization and direction of the enterprise, does not determine its survival. In the case of railways, the technically inefficient companies do not drop out of competition; for the weaker lines struggle on and "demoralize" rates, until they fall into the hands of the receiver. The receiver continues to operate them until they are reorganized, and relieved of their most pressing obligations. Then they continue to operate, though often still weak. On the other hand, the efficient railway companies do not become the sole survivors, but ever have to confront the bankrupt carriers and the struggling circuitous routes which can secure business only by making rate concessions. The history of such railways as the Wabash and the Erie, amply illustrates the situation. This survival of the unfit is primarily due to the large investment which is sunk in highly specialized forms of capital that can be salvaged only by continued operation. But the close relation of the railway to social, political, and legal considerations, is also to be noted.

The conclusion must be that railways will compete with one another in service, and will lend themselves to the furtherance of competition among different cities and areas which they severally

serve, but that any competition in the matter of naming rates which arises *among railways serving the same market*, is sporadic and soon passes away. Direct railway rate competition, such as finds expression in rate reductions, tends to become "cut-throat", and cannot normally exist. More or less public regulation is always in evidence.

But this does not cover all phases of competition. It does not mean even a tendency toward complete monopoly. In the first place, railways are limited in their charges by the interests of the producers who furnish their traffic, and consequently must adapt rates to the competition which exists between various producing centers for the same markets. In the second place, the ocean, lakes, canals, rivers, and highways, all directly or indirectly affect railway charges, and set limits to their ability to secure the maximum net return. Finally, as already indicated, government regulation has tended to reduce the discrimination by emphasizing cost as a basis of classification. In fact, we do not find rates which are determined on a purely monopolistic basis, but rather rates which are fixed by government regulation. The point is that government policies are necessarily adapted to or affected by the technological character of the railway business, and are accordingly influenced by the conditions which cause that tendency to monopoly which is characteristic of those operations.

With the aid of the foregoing preliminary analysis, we can now understand the phenomena of existing railway rates as being the result of a struggle and compromise among three chief forces:

- (1) An inherent monopolistic tendency to secure from part of the traffic the highest net return, and to classify traffic on the basis of "what it will bear".
- (2) Elements of competition which always limit the railways' monopoly, and especially the competition among markets and with waterways and highways.
- (3) Government regulation, with its emphasis of cost and of broader considerations of social welfare.

In order to understand the determination of value under such conditions, therefore, it is necessary to consider each of these three elements.

A. The Theory of Monopoly Price as Applied in a Case of "Monopolistic Competition"

The law of monopoly price is that, under complete monopoly, prices tend to be fixed at such a level that they will yield the highest net return available under existing demand schedules and expenses. Therefore, it seems reasonable to conclude that under partial monopoly, or "monopolistic competition", prices will *tend* to be fixed somewhere between the competitive equilibrium price and the monopoly price, depending partly upon the mixture of monopoly and competition, and partly upon other limitations on economic motivation. Accordingly, the conclusion must be drawn that any industry that closely resembles railway transport *tends* to adjust its rates or prices so that *in the aggregate* they will yield a net return upon the investment which is somewhat above what it would be under competition. (Of course, due allowance is to be made for periods of cutthroat competition.)

While it is to be remembered that the law of monopoly price is not actually allowed to work itself out, it is still important to consider how it would work if it could, since the tendency is always *there*. How, then, is the highest net return to be secured in the railway business? Three points seem clear:

(1) *No rate would be fixed which would be permanently below the direct cost of the particular service involved, "direct cost" meaning the cost which would disappear if the particular service were withdrawn.* This direct cost would have to set a minimum, for any service performed at a rate below that minimum would mean a reduction in net returns. This cost would have to include a part of the variable transport and maintenance expenses, and the expense of handling at terminals, keeping records, and the like. However small might be the amount of added expense that could be specifically attributed to any class of traffic, it would be significant as furnishing a minimum below which the monopolist could not go without failing to secure the highest net return.

(2) *No rate could be permanently so high that it would shut off traffic that might increase net returns.* Under "monopolistic competition", the railway would sometimes have it in its power to name rates nearly as high as it might please, but there would be no pleasure in fixing rates so high that profitable traffic would be reduced in amount.

(3) *If allowed to act as complete monopolies, and if managed with*

perfect efficiency, railways would tend to fix rates somewhere between the minimum and the maximum points indicated, so that the product ton-miles \times rate, would approximate the maximum total net revenue.

Monopoly Class Price

The idea of monopoly class-price enters at this point. It is often impossible to secure the highest net revenue by charging all customers the same price for the same service. Accordingly, the monopolist, in seeking the highest net return, tends to classify his customers or branches of business according to their ability to pay, and seeks to secure the maximum price for each class. In other words, he practices discrimination.

Everyone is familiar with the practice of putting out goods which are practically the same under different labels or other superficial distinguishing marks, and charging different prices. This was once the practice of the Standard Oil Trust in making different prices for different "grades" of kerosene. The publishers of copyright books often get out series of different editions, ranging from limited "de luxe" issues, perhaps autographed, down to "popular editions", which are sold at widely different prices—prices which differ much more widely than do the expenses of the different editions.

In the railway business, this tendency to get a maximum total net return by charging each class of traffic the most it will bear, is especially strong, for the reason that the costs are so largely joint and indeterminate. This is why such ideas as "value of service", "what the traffic will bear", and "value of the commodity" have gained so much prominence in making railway rates. "Low-grade traffic", which has little value, although it may cost as much to move it, cannot bear as high a rate as can high-grade traffic, and accordingly, is allowed to move on special "commodity rates"; while the higher grades of traffic are arranged in a series of classes which are charged widely different rates, often with but little reference to the relative expense of transporting them. The expense of handling and moving the higher grades may or may not be greater than is the case with the lower grades. The point is, that *the difference in the rate charged is not in proportion to the difference in the expense.* Local rates are apt to be higher than

through rates. Points having water competition have rate advantages over those which do not. Passengers who can afford it are given an opportunity to pay disproportionately high prices for superfine service. In these ways, under monopolistic competition, the carriers seek to secure a maximum net return, and if they were subject to no regulation, the discrimination among classes of traffic would be more marked than it is.

B. The Theory of Competitive Value, as Applied in a Case of "Monopolistic Competition"

1. Particular Rates vs. General Level of Rates

If a decisive amount of competition be assumed in an industry in which many different kinds of product or service are marketed, the first step to be taken in developing a true theory of value is to recognize the difference between the general level of prices or rates and the particular individual prices or rates. Just as the average of the prices of all steel products is related to the total sales of all steel producers, so the general rate level finds expression in the total operating revenues of the railways, and may be thought of as reflected in the average receipts per ton per mile of all freight. It is the general level of rates which is involved when the question of a flat percentage advance in rates is raised; and the primary question connected with the general rate level is the return upon investment.³

Clearly, this is a matter pertaining to the demand for, and the supply of, plant, equipment and all productive facilities in an industry as a whole. In the railway business, for example, when the volume of traffic becomes such that shippers require more track, more cars, and more terminal facilities, they must pay more for the railway service as a whole, and if there is no apparent way of meeting the situation by advancing the rates on some particular commodities, the natural recourse is to raise all rates. Or if total railway operating expenses increase to a point where operation

³ Thus when, in 1922, rates were reduced by 10 per cent, it was the general level that was affected. It was because the Interstate Commerce Commission believed that the carriers could earn 5.75 per cent upon their investments with a lower average rate, that the 10 per cent reduction was ordered.

ceases to be profitable, shippers must pay more, in order to insure the continuance and development of the required railway plant, and the general level of rates must be increased.

At other times, however, the rate question is one which involves mere particular rates. It may be that the railways as a whole are earning adequate returns, but that the rates from some cities to an important market are so low that companies serving other cities cannot compete on even terms. They demand either that their rates be similarly reduced, or that the rates enjoyed by the favored cities be advanced. In such cases, the matter is one of discrimination in particular rates or prices. Some individual rate or price is involved, and the question is one of its right relation to other rates or prices. To be sure, the raising or lowering of an individual rate will affect the total revenue or the average receipts per ton-mile, and consequently the return upon investment. Such effects, however, are merely incidental. The problem is primarily one of discrimination, or relative reasonableness, and exists regardless of whether the carrier is earning a fair return on investment or not.

The problem of the general level of rates is concerned with total operating expenses, while in the case of the particular rates the only immediate consideration is the particular expense of the particular service performed in transporting some particular commodity.

The procedure will be first to consider the problem of *relative* rates, and to seek to develop a principle according to which an equilibrium rate may be made for some particular commodity, taking into consideration the cost and expense of transporting that commodity. Back of this problem lies the necessity of maintaining a general rate level which will enable the carriers to earn a fair return on their investments. For the present, however, it will be assumed that we are in a position to do this, and the general rate level will be referred to only incidentally.

2. Determining Particular Rates under Monopolistic Competition

Free competition determines value at a point where the marginal demand-price and the marginal supply-price are approxi-

mately equal. In the railway business, the marginal demand price *for any given volume of traffic* is the sum which will be paid by the shipper whose demand for the transport service involved is the least. We may think of all the shippers of a given product in a given producing territory as being arranged in the order of the amount per hundred pounds that each is willing to pay for the transport of his product. For example, it may be assumed that there are ten manufacturers of shoes in St. Louis. Each one has a different cost of producing shoes, and there may also be differences in their success in marketing, which result in different wholesale prices they secure at the point of destination to which they are shipping. At the top of the series is the shoe manufacturer whose cost of production is the lowest, and who secures the best price for his product at the point of delivery. He would be willing to pay a much higher railway rate than would the tenth manufacturer, whose cost of production is the highest and who secures the lowest delivered price. This tenth or marginal shipper can barely afford to pay the existing rate. His "demand price" for transport service is the marginal demand price.

On the other hand, the marginal supply price is the least that the railways can afford to accept for the transport service. There are several railways out of St. Louis, each having different operating expenses and different traffic problems, such as empty back haul and the like. Moreover, each one of the railways has a *series of expense levels*, which, as they are successively impinged upon, offer increased resistance to reductions in rates. The highest level is a pro rata share of all expenses, including fixed charges. If, under competition, the railway cannot secure from the shipper of shoes a rate high enough to equal this total expense-cost level, it will seek to secure enough to cover all *transport* expenses, including both terminal charges and the expenses of the line haul. Below this second expense-cost level, lies a minimum level set by the expense which would be added by the particular shipment. This may be called the "specific expense". It would be barely enough to defray the expense of loading and unloading the shipment (if it is L. C. L. freight), the expense of making the records that are

involved, of collecting from the shipper, and an allowance for loss and damage claims. This minimum should generally also include a share of the line-haul expenses based on the average ton-mile operating expense; but in case of an empty back haul even this item may not be required.

Of course, there are many more possibilities than the three levels here suggested. These three levels have been mentioned merely to bring out the idea of marginal supply price as applied to railways. This marginal supply price of transport service is normally *the least charge that can be accepted without incurring a loss by the railway which either needs the business most or is least efficient.*

It will be noted that the idea of loss is not absolute. A railway's expenses are such that without loss it may accept the traffic which merely covers the added expense of taking on that particular traffic. When traffic will not bear more than this, it cannot be said to be a loss to handle it at the minimum level. No traffic can be hauled for less than the minimum level suggested, however, without loss; and under competition, no rates could normally persist below that level—unless we were to accept the idea of price "leaders", such as are made by department stores, which is almost always open to question as a competitive device, and which would be intolerable in the business of a common carrier.

It will now be easy to grasp the idea of a group of shippers, each with a particular, individual, marginal demand price, which group confronts a group of carriers, each one having its particular marginal supply price for transport service. Of course, there are at least as many groups of shippers as there are kinds of business. For the transport of each commodity, therefore, there is a separate balance between a group of shippers' marginal demand prices and carriers' marginal supply prices. When these marginal demand prices and marginal supply prices are in equilibrium, the true economic rate is determined.

(1) *Factors Determining Demand Price.* The shipper's demand price for transport service depends upon a group of factors, each one of which must be carefully considered in order to determine

how high the rate may be. These factors will be taken up roughly in the order of their importance.

Probably the simplest case of demand for transport service is that which is derived immediately from the *wants of the consumer*. When an individual orders from some mail-order house a bill of goods on which he has to pay the freight, he has acted because he desires the goods in his home where he can consume them. The demand for transport is incidental to the demand for the goods. The more intense the desire of the prospective consumer, the greater the potential demand for transport, and the higher the rate which the carrier might charge.

(a) *Shipper's profit*. The great bulk of freight, however, consists of goods which are shipped to manufacturers, merchants, etc. Their demand for transport service is not immediately connected with the wants of the ultimate consumer. The underlying basis of their demand for transport—which applies to most of the railways' business—is *the profit secured by the person or firm which is responsible for making the shipment*. When goods are shipped from one market to another, it is ordinarily due to the fact that they meet a greater demand at the point of destination than they had at the point of origin. Much as a spark tends to jump from the positive pole to the negative, goods tend to move from places where they have a lower level of valuation to places where they find higher valuations. To carry the analogy further, if the distance between the two poles is too great, or some non-conducting material intervenes, the transfer of electricity does not take place. Just so, if the cost of transport or the rate is too high, or if the consumer's desire is too low, the shipment will not normally occur.

The typical case is that of a manufacturer who is shipping his product at a price which includes the freight. The manufacturer has a certain expense-cost of production, which we assume to be \$1 per unit of his product. The price at which that product is selling in a city 100 miles away from his plant, is \$1.50 per unit. The difference between his expense and the price in the distant city is 50 cents. Obviously, this manufacturer could pay a freight rate amounting to 50 cents per unit without loss. The utmost limit of

his individual demand for transportation at a given time is set by the spread between his expense f.o.b. cars at the factory and the market price at destination. As a matter of fact, he must ordinarily make sufficient profit to reward him for the risks and services which are involved in his business enterprise, and consequently the maximum of his demand for transportation is measured by a sum which is somewhat less than 50 cents; say 40 cents.

Similarly, a retail merchant who orders goods from a wholesaler has to pay a certain price f.o.b. cars at the point where the wholesaler is located, and tries to sell the goods to his customers at a price somewhat above his expense. The difference between the two figures, allowing for his profit, constitutes his maximum demand-price for transport service.

In short, the ordinary basis of *demand* for transport service lies *immediately* in the difference between the cost of production, or the cost of goods purchased, at some point of origin and the price at which the goods *can be sold* at the point of destination. Fundamentally, however, as will be shown, it is not the price at the destination, but the "demand-price", which counts.

Demand for good at destination affects both value of good and value of transport service. The question which naturally arises at this point is—Does the price of the goods at destination not depend in part upon the freight rate, and consequently is it not reasoning in a circle to say that the demand for the transport service depends upon the difference between cost and delivered price? ⁴ The answer to this question is as follows:

In the first place, it is not the thesis here presented that the *rate* depends upon the difference in price, but that the *demand* for transport *partly* depends upon the difference between expense at one point and price at another. It is only the demand side of rate determination with which the discussion is concerned at present, and it is claimed only that demand partly depends upon the margin of profit.

In the second place, with reference to demand, the circularity of

⁴ This question is answered in the affirmative by many economists, e.g., G. P. Watkins, "The Theory of Differential Rates", *Quart. Jr. Econ.*, XXX, 697 (1916).

reasoning is only apparent. It is true that the price at the point of destination is related to the freight rate, and that the two tend to vary in the same direction, but it does not follow that one is the cause of the other. The fact is that in so far as demand is concerned, both rate and price depend upon the working of the same valuation process, and their variation in the same direction is due to the fact that they are the *results of a common cause*. When the price of shoes is determined at Nashville, Tenn.—assuming competition to prevail—it must, in the long run, be fixed at a level which will enable the dealers at that point to clear their stocks at a reasonable profit, and it will be such that the “*demand prices*” of the marginal buyers of shoes will coincide with the “*supply prices*” of the marginal shoe dealers.

The “*demand prices*” of the buyers are subjective. They are not objective market prices, and they are determined independently of railway rates. A part of the considerations which determine the “*supply price*” of the marginal dealer, is his operating expense plus the cost of the shoes to him.

Let there be any given quantity of shoes in stock, and a marginal buyers' demand price of \$8 per pair. On the other side of the problem, are the marginal dealers' complete economic costs including all disutility-cost and expense-cost. Let these be: operating expenses, losses, and fixed charges, \$1.90; interest and profits, \$1; total \$2.90. The margin between these items and the marginal demand price is \$5.10, and this sum represents the *dealer's* demand for shoes delivered to him, including the price f.o.b. factory (\$5) and a balance of 10 cents for the transport of a pair of shoes. Therefore, any dealer's demand price for the transport of shoes is determined partly by the marginal buyer's demand price of shoes and partly by his own costs and operating expenses as a dealer. If buyers are willing to pay high prices for shoes, and the dealer operates efficiently, he will be willing to pay larger freight rates than otherwise. If we assume a given “*supply price*” of shoes, based on costs of production at the point of origin, the demand for the transport of those shoes depends upon the process by which the shoes are valued at the point of destination; and it varies according

to the difference between demand price and the total costs and profits of manufacturer and dealer. There is no circularity in the reasoning.

Immediately, the demand of the manufacturer of shoes in St. Louis for transport service depends upon the margin between his cost of production and the price of his product at destination. A complete analysis of the situation shows that the price at destination depends upon the demand and supply at that point. The demand ultimately rests upon the individual demand-prices of buyers, which demand-prices refer to shoes and not to manufacture or transport as such.

The demand for transport, like the demand for shoes at the factory, is reflected back from the demand for the shoes at the point of consumption; and depends partly on how much consumers desire the shoes, and partly upon the costs and degree of competition among the shoe manufacturers, the two latter factors determining how much of the consumer demand will be passed on to the railways.

Under competition, the demand for railways depends upon the demand for the goods transported and the amount of the costs of the manufacturer and of the dealer. In other words, the railway rate, as distinct from the railways' operating expense, is secondary to the price of the goods transported, the demand for which gives the demand for the transport service. This is but another way of saying that the railway service is not wanted for itself, but in the last analysis only as a means of supplying the desire for consumer goods. The price of the good does not depend upon the rate, but the rate, in so far as demand is concerned, does depend upon the demand for the good.

It must not be supposed that under competition it is the railway rate (i.e., the *value* of the transport service) which limits the supply of shoes or other commodities at any point to which they are transported. In the last analysis it is the *cost* of the transport service which limits the supply of transport and of the goods which require transport. The supply-price is a composite sum covering: (1) the dealer's operating expenses, (2) railway operating expenses, and

(g) interest and profits for all the capital and business enterprise involved.

(b) *Specific value of the commodity.* While the difference between marginal demand price at the point of destination and the cost at the point of origin, is the underlying basis of demand for transport service, there is a second factor which profoundly affects that basis. Each commodity usually has a certain relative value level which is irrespective of place. Shoes are more valuable than sand, we say, and diamonds are most valuable of all. By this, we mean value in a given bulk or weight, and we have in mind that under any ordinary circumstances it would take many carloads of sand to be equal in value to a diamond. Value in this sense may be concisely indicated by the phrase "specific value". When the value of a good in proportion to its weight is ordinarily small, as is the case with sand or hay, we say it has a low specific value. This is analogous to the idea of specific gravity, for we say that an object of great weight in proportion to its bulk, has a high specific gravity.

The demand for transport service varies considerably, according to the specific value, between two such commodities as coal and silk.⁵ Say that the price of coal at the point of origin is \$5 per ton, and the price of silk cloth at the point of origin is \$500 per ton. If a uniform rate of \$1 per ton were in effect, consider how different would be the demand for transportation. After paying the rate there would be a margin left in the value of the coal of \$4, while the silk would be worth \$499 more than the rate. The rate in the case of the coal would be one-fifth of its price, while in the case of the silk it would be only one five-hundredth. The charge for transporting \$500 worth of coal would be \$100, while the \$500 worth of silk would move for only \$1. The value of the coal would allow it to move only one one-hundredth of the distance that the silk could move before it was exceeded by the rate.

In short, the lower the specific value, the more important is a small change in the freight rate, and the less intense is the demand

⁵ On a certain Western railway it was found that the percentage of the rate between two points to the price of the commodity, varied from 59 per cent in the case of cement down to only 3 per cent in the case of cotton. On bituminous coal the rate was 54 per cent of the price; on wheat it was 8 per cent.

for the transport service. The margin of profit per unit of weight is lower in the case of goods which have a low specific value, and the expense of transport more quickly eats up that margin.

It is commonplace in discussing freight rates to point out that low-grade commodities, which means commodities having low specific value, cannot stand high rates. This is merely to say that the demand for transport in the case of low-grade commodities is less intense.⁶

The result is, that the shipper's margin of profit, is, in reality, a function of two variables, the one dependent upon the difference between places, and the other dependent upon the specific value. Both have to be considered, and together they determine what may be called the "specific demand for transport service".

The foregoing points are the basis of demand for transport, but there are a number of factors which affect the working of that basis, just as the effects of the force of gravity are modified by the friction of the air or other medium through which a falling body moves. Perhaps the three chief factors are the perishability or storability of the commodity, availability of substitutes, and shipper competition.

(c) *Kind of commodity.* Among the most important conditions affecting the shipper's demand is the perishability of his shipment. Fruit, milk, and meat, for example, must be shipped at certain times and with a certain degree of rapidity, or they deteriorate and will not bring a price at the point of destination which will yield a profit. Indeed, they may lose their value altogether. Consequently, the shipper is not in a position to hold such commodities or to resort to cheaper but less rapid or regular transportation devices, and his demand for transport may be correspondingly intense.

⁶ Such commodities are either ranked low in freight classifications, or are given special (commodity) ratings. It may cost as much per ton to move them as it does to move the goods having higher specific values, but the demand for transport which is derived from the exchange of ownership of a given quantity is less than the demand derived from the exchange of a like quantity of higher class commodities. A hundred pounds, or a ton of coal or sand, is worth so much less than an equal quantity of silk or shoes that the difference between the cost at the point of origin and the price at the point of destination can never under any usual circumstances be as great as exists in the case of commodities having the higher specific value.

Commodities which cannot be conveniently or economically stored are similarly affected, as is the case with anthracite.

(d) *Substitutes*. A very important factor in determining demand for transport service is the existence of substitutes for the commodity which is being shipped. The consumers' demand price at the point of destination may be held down by the fact that they can secure some other commodity which will serve the purpose at a price which is but little above that of the commodity in question. Thus the prices of anthracite and of stone (and the demand for their transport) are held down by the existence of bituminous coal and cement as substitutes.

A distinct phase of substitution is furnished by cases in which the commodity in question is manufactured at points to which it is also shipped. No doubt shoes are shipped into St. Louis, but the fact that large quantities of that product are manufactured in St. Louis and could be supplied to the local dealers without the cost of transport, must affect the intensity of the demand at that point.

(e) *Competition among shippers*. When a product is monopolized by a single large shipper, and there is no competition among buyers, the potential demand for transport service may be great, but the bargaining power of the shipper is greater than would be the case were the same volume of production marketed by a number of competing shippers. The carriers could play the competitors against one another, and the most efficient among the producers, who would be the one who could afford the highest rate, in his eagerness to secure transport service might bid up the rate. A monopolist, however, would reverse the situation and play the railways off against one another, giving his traffic to the carrier who would name the lowest rate. (This consideration, however, is probably not one which would enter into the determination of a reasonable rate by the government, as it has been found by experience that discriminations made in favor of large shippers are a powerful weapon in the hands of monopoly.)

Summary of demand factors. The discussion of these various factors which determine the demand-price of shippers, may be summed up by saying that the maximum demand for transport

service exists when a perishable commodity of high specific value, for which there is no substitute, is offered by competing shippers for transport from a point where cost of production or purchase is low to a point where the demand-price is high. Perhaps milk will illustrate such a case. Conversely, the demand for transport is at a minimum when a low-grade commodity which is not perishable and which can be economically stored, and for which there are substitutes readily available, is offered by non-competing shippers for transportation between points having small spread between cost and price. Salt and cement are commodities which more or less completely illustrate the conditions of minimum demand for transport service. Between these two extremes lie all degrees of intensity of demand.

It is not to be supposed that these different degrees of demand intensity can be measured readily or determined accurately. Under complete competition, the method of trial and error would be applied, and it might be only after many experiments and changes that the force of the demand could be approximately gauged, and would find expression in the economically correct equilibrium rate.

(2) *Supply Price of Transportation—General Basis.* As has been seen, the shippers as buyers are confronted by the railways with their several scales of supply price. The problem of determining particular railway rates is only half solved by analyzing the determination of demand price. It remains to consider how the supply prices of the carriers are derived.

We are at once confronted by the fact that on account of the large element of joint costs which characterizes the railway business, the supply price for the transport of any particular commodity, is indeterminate. It is, therefore, necessary to proceed somewhat as follows:

First, we can say that the total of all rates received, or the total freight revenue, must at least equal the total operating expenses assignable to the freight service. That gives us a controlling total, and when the sum of the receipts fails to equal the total expense in the long run, we can know that some rates must be raised.

In the second place, the rate on any particular commodity must

in the long run cover the *added expense* of handling and hauling that commodity. As we have seen, a specific minimum cost can be assigned to each particular shipment or class of traffic, and on this basis a minimum rate, which, though very small, is something definite, can be named.

In the third place, it can generally be known whether it *costs either more or less to transport one commodity than another*. This point is one which has great practical importance. As a matter of fact, it might well be that without knowing a single individual expense, a fairly workable allocation of total expenses might be made on the basis of an estimate of relative expenses. To be sure, such a procedure would require experiments, but many experiments have already been made in the railway business, and there are always some rates which have come to be recognized both by shipper and carrier as reasonable—rates, too, which appear rational when considered by some third party, such as the government, from the point of view of the forces of demand and supply. With such a rate as a starting point, all other rates can be built up by comparing the commodities concerned, and asking, Is the demand for the transport of one greater or less than that of the other? Does it cost more or less to haul the one than the other? At this point, however, we are concerned only with the expense side of the problem, and are emphasizing the point that, while it is impossible to determine exactly the expense of transporting any particular commodity, it is possible to arrange the thousands of commodities hauled by railways roughly in a scale, and to say that this commodity or group of commodities must involve higher transport expense than that.

(a) *Specific cost*. Each carrier has for each commodity a specific cost which tends to be the minimum supply price at which that carrier will furnish transport service for that commodity. (This is true whether competition or monopoly prevails.) What determines such minimum supply prices? First come those variable expenses which are not joint, or which, if joint, can be fairly averaged. Here lie most terminal expenses, amounting to several cents per hundred pounds in many cases. Then come certain of the transport expenses proper, including maintenance of equipment and, at least, a part

of the fuel for locomotives. Clearly, such expenses have some relation to the varying conditions which attend the transport of different commodities, among which may be mentioned the following:

Distance is a factor. A shipment which moves 200 miles must cost more than one which moves only 100 miles, other conditions being the same.

When the lay of the land is the same, distance is the chief factor, but otherwise *grades* and *curves* may make an important difference in operating expense.

The *amount of switching and terminal service* is sometimes an important consideration in rate making which can be rather definitely allowed for; and switching and terminal charges have been given increasing importance in rate cases. Such charges can often be assigned to given localities or to different kinds of traffic.

Obviously, the *size and weight* of the shipment have something to do with the minimum expense, and an article which weighs twice as much or is twice as bulky as another must involve more expense to the carriers, other things being equal.

The *loading characteristics* of various commodities differ widely, it being possible to make up heavy carloads of some, while others furnish lighter loads. The unit expense of hauling partly loaded cars or commodities which cannot furnish a heavy minimum car loading is relatively great and this is considered by the carriers in making rates.

Risk is another matter in which different classes of traffic show definite differences, and by experience it may well be determined that the average payment of loss and damage claims per unit of one kind of commodity is twice as great as per unit of another kind.

Some commodities require box cars while others may be moved in open cars or on flat cars. The *kind of car* required affects the supply price of transportation.

There is also the matter of the *special service* which may be required. Some commodities must be moved at special speeds in order to make the market, as is the case with perishables and livestock; other commodities require special protective service, either in the way of refrigeration during hot weather or protection from cold during the winter. The special charges required for such service can be fairly well allocated and assigned to the particular commodities or group of commodities for the benefit of which they are performed.

Direction of traffic is sometimes a dominant consideration in the carriers' supply price, the most common point being that goods which move in the opposite direction from the prevailing traffic can help to fill empty back-haul cars. Railways have sometimes gone to great lengths in making low rates for the purpose of developing back-haul traffic.

(b) *Decreasing cost.* The foregoing factors affecting expense are the most important and reduce to the smallest number the points

that a railway traffic manager would have to consider in determining what his minimum charge would be for hauling any particular commodity.

There is one other consideration, however, which is of equal importance, and which applies to all kinds of traffic regardless of distance, special service, etc. This is the *volume of traffic*. Within limits, the railway business is subject to the law of decreasing unit costs, and within those limits the greater the volume of the traffic, the lower the expense per unit. It follows that a railway may make rates which, on the basis of an existing traffic, are less than expenses if it is sure that under the low rates the business will develop in such volume as to reduce expenses within a reasonable time. For example, low rates have been made on coke for the purpose of encouraging the steel business, and thus bringing a profit to the carriers from the increased steel tonnage. This is a delicate consideration and obviously may be made the ground for discrimination in rates. At least, it is easily possible to be mistaken about the future development of traffic. Also, it may be forgotten that when traffic grows beyond certain limits, there must come an increase in plant or a change in organization which will result in increased expense. Nevertheless, each competing railway is subject to the law of decreasing unit cost, and, if wisely administered, railways can, and under free competition would, make their rates with a view to that law.

Two illustrations may be given of the way in which increased volume of traffic affects operating expenses, and consequently, the railway's marginal supply price of transport service.

In the first place, there is a difference in the size of individual shipments as regards the extent to which they utilize car space. It is largely on this basis that there is such a difference between carload and less-than-carload ratings. The relatively small less-than-carload shipments have to be consolidated to make up a carload, which means extra handling and risk; but more than that, they cannot be made into such large carloads as is the case with "carload freight," partly because the different shipments have to be taken out of the car at different points. Accordingly, the minimum rate

that can be charged by a railway would be lower in the case of shipments which would move in carload lots.

The second way in which volume of traffic is important, concerns the regularity and quantity of freight supplied at a given point or within a given territory, and destined for a single point or group of points. The bituminous coal roads derive a large and steady volume of traffic from the West Virginia mines and on that account can afford to haul that traffic at low rates. Indeed, they make large profits in spite of their empty back hauls. There is no question of carload versus less-than-carload freight here; but the cars are heavily loaded and are available in such trainloads that the locomotives can be used to their full tractive power without delay.⁷

Summary of Demand and Supply Factors. Assuming the foregoing analysis of demand and supply factors to be adequate, they may now be summed up as follows:

CHIEF FACTORS AFFECTING DEMAND FOR AND SUPPLY OF RAILWAY TRANSPORT SERVICE

Shippers' Demand-Price Factors:

1. Shipper's margin of gain
2. Specific value of commodity
3. Perishability and storability of commodity
4. Existence of substitutes
5. Competition among shippers

Carriers' Supply-Price Factors:

1. Maximum limited only by marginal demand price
2. Minimum equals specific cost; is dependent on—
 - (a) Distance
 - (b) Direction
 - (c) Bulk and weight
 - (d) Risk
 - (e) Special service
3. Law of decreasing cost:
 - (a) Size of shipment
 - (b) Volume of traffic between given points

(3) *Locating the Rate Between Maximum and Minimum Points.* It will be apparent that the closest analysis of the demand and

⁷ The grain traffic of the Granger roads and the Trunk Lines furnishes an illustration of economy arising from volume of traffic, but here the volume is not sufficiently continuous throughout the year to be most desirable, and alternate car surpluses and shortages are likely to arise. On the other hand, the New England railways, with their small carloads and trainloads, and their short hauls of diversified freight, illustrate the relative disadvantages not only of less-than-carload freight, but also of small total volume of traffic.

supply conditions affecting railway rates brings us only to a point at which, while we can fix a definite demand-price, we are still confronted by a range of possible supply-prices between a maximum and a minimum.⁸ The situation is illustrated by the diagram in Fig. 15.

The line OX is the axis on which is measured units of freight transport service, say ton miles of a given class of goods, moved in the same direction between two given points. It is assumed that there are four railways which "compete" for the traffic. On OY are measured the bids and offers for transport service, and the rates actually charged. The curve DD' is a demand-intensity curve which

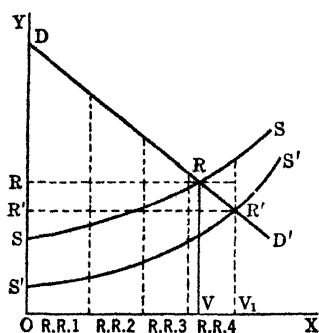


FIG. 15

represents a series of shippers' demand prices for units of transport service. The curves SS and S'S' represent two series of supply intensities which are the maximum and minimum supply prices, respectively, of imperfectly competing carriers. (S'S' tends to represent minimum "specific costs" for handling the given commodity. SS represents the tendencies of the carriers to ask higher prices for their services than they could get under complete competition.)

It is assumed that the volume of freight is such that the services of all four carriers are required at times, though sometimes railway No. 4 may not get any of the particular traffic. Where the railway rate will be determined, and an equilibration between a marginal demand-price and a marginal supply-price will occur, cannot be definitely stated. The most that it is necessary to say is that the point will tend to lie between R and R', the points at which the demand-intensity curve crosses the two supply-intensity curves.

The crucial problem then, in the determination of railway rates lies just here. It is possible in principle to determine a minimum basis of rates and also a maximum, but where "should" the exact

⁸ Cf. above, p. 149 and notes.

rate lie between these two points? It seems that the only answer to the question is that the precise rate to be charged must depend upon the intensity of the demand for the transport of the particular commodity involved; and it is suggested that it is both consistent with actual railway practice and with the sound interest of the government in regulating railway rates, to consider the scale of demand prices in determining how much of the difference between maximum and minimum charges should be borne by each item of traffic. To this extent we fall back on the element of truth which is in the minds of those who say that rates should be made on the basis of "what the traffic will bear." But we have maximum and minimum limits, and we now have a definite conception of how the bearing-power of traffic is to be determined.

Relative vs. absolute equilibrium of rates. This seems to be the point at which to bring in the idea of the contrast between relative normality or reasonableness and absolute normality or reasonableness of rates. An absolutely normal or reasonable rate would be one which in itself, without regard to others, would satisfy all tests of economic equilibrium, and the general concept of such a rate would be one that would yield a "fair" return on the investment, judged by competitive standards. It would, therefore, have to contribute a pro-rata share of *net* earnings. Obviously, such a concept is only applicable when expenses can be definitely assigned to each paying unit. As a matter of fact, therefore, the concept of normal in the sense of specific equilibrium or *absolute* equilibrium or reasonableness, is of little practical importance in the railway business in so far as particular rates are concerned. It finds expression as to particular rates only in setting certain limits—a maximum determined by demand and a minimum set by "specific cost." These limits may be said to be absolute; and, to the extent that they approach one another and the margin between them is narrow, the determination of the particular rate approaches the level of equilibrium. Aside from ethical or political questions, this may represent absolute reasonableness.

The great mass of rates, however, fall between the maximum and minimum points, and are only subject to the rule of *relative* rea-

sonableness.⁹ It is thus apparent that, in rate making, the basis for deciding what proportion of the joint expenses and necessary return on investment should be borne by the various particular commodities or classes of traffic, is of the utmost importance. This is the question of relative reasonableness.

The thesis here presented is that there must be some tendency in the railway business *to make the relative intensity of demand the basis for determining the relative reasonableness of rates.*

In each case, however, this basis will be supplemented by an allowance for the relative expense of the transport service involved. Just as we can generally know that the demand for some particular transport service is greater than that for some other service, so we can generally know that the expense of any particular service is somewhat greater or somewhat less than that of another service. Reference to the nine expense factors listed above will make this statement somewhat more comprehensible. Take distance, for example. If in any particular case, the transport services are virtually the same except that the distance varies, it can readily be stated that the expense of any particular service is greater or less than that of some other service, and possibly also the amount of the difference can be specified. If one commodity requires protective service while another does not, it can be said that the expense of transporting the former is relatively great. In this way, commodities can be ranged in a relative scale as to expense, and this scale of relative expense can be compared with the scale of relative demand intensity. On the basis of these scales, the sum of the joint costs and return on investment can be allocated to each item of traffic on a *relatively* reasonable basis.

(4) *Final Scheme of Particular Rate Determination.* The way that

⁹ Some years ago, a committee of the Senate, commenting on the decisions of the Interstate Commerce Commission, reported that, "Each complaint has always left unchallenged some of the rates made by the same carriers, and the idea of comparison between the rates questioned and others, argumentatively at least, admitted to be reasonable has always been prominent." The report adds, "In fact, even in the few cases in which charges have been declared excessive in themselves by the Commission (no such finding has ever been made by a Federal court) the tests applied have invariably been comparative." (Digest of Senate Hearing on Rate Regulation, 1906, p. 25.)

the matter of rate or price determination would work, under such "monopolistic competition" as exists in the railway field, would be somewhat as follows. The total operating expenses may be taken as a starting point. These are allocated to particular services. As nearly as possible, all the expenses which are attributable to the freight service, are so allocated. A part of these expenses—it cannot be said what exact percentage—are both variable and specifically assignable to different classes of freight. At least, there is such a logical relation between the variation of certain expenses and the volume of traffic, that there is no more reasonable basis than that of charging the traffic with such expenses. These specific expenses constitute a bare minimum.

The problem of the railway enterpriser now is to know what to do with that large portion of expense which cannot be specifically assigned. He knows that it is caused by the movement of freight, and must be paid out of the receipts from freight; but that is all. What he will tend to do is to determine the demand for transport so that it can give him a reasonably precise basis for determining what each item of freight traffic should bear—by "should bear" meaning what is economically expedient. Since he is interested in net returns, his determination of relative demand will, of course, be supplemented by a consideration of relative expense.

Accordingly, the next step is to ascertain as exactly as possible the facts with regard to the factors affecting shippers' demand price, and on that basis to determine how much of the joint expenses should be borne by each commodity. This procedure is roughly illustrated by the diagram in Fig. 16.

On the line OX, are measured ton-mile units of transport service for different commodities and markets. (Probably three dimensions are needed, but for the rough purpose of illustration, the general ideas can be indicated in two dimensions.)

Points on the line DD' represent a series of shippers' marginal demand-prices for the transport of all the various commodities that move by railway freight. At the high point of the curve, fall those commodities for which the shippers' demand is most intense. They depend upon the various considerations mentioned on pages 359

to 367. Thus this so-called demand curve, applying as it does to different classes of freight, really represents a zone of demand prices as suggested in the note on page 149. (This is illustrated by the spread between DD' and RR' , as will appear.) To this extent, the diagram supplements the one on page 372, which represents a single class of freight.

The irregular line Sc represents the carriers' minimum supply prices based on specific costs. These supply prices are definite, but do not have any relation to the shippers' demand prices. They are absolute quantities.

It would appear to be true, however, that the commodities having higher specific values, which chiefly fall in the upper range of

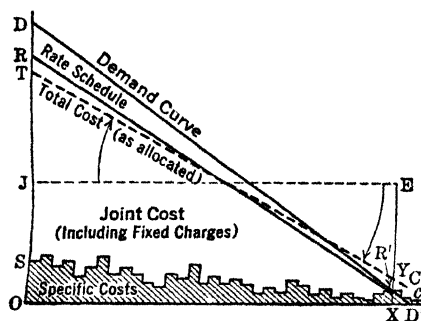


FIG. 16

the demand-price groups, are also the ones which move in smaller volume, require more special service, etc., and consequently, the general trend of the irregular line Sc , is similar to that of the line DD' .

The line JE represents the large element of fixed and other joint railway expenses. This line is horizontal, for the reason that the expenses it represents are either fixed, or, if variable, do not vary with definite relation to the volume of any particular kind of traffic. These expenses are apportioned to the different commodities on the basis of demand intensity, and consequently the line JE tends to take a course like the dotted line TC . The minimum rate to be charged on any particular kind of traffic, therefore, tends to be

found by adding to the specific cost of that traffic, represented by its point on the line Sc , its share joint costs. This share will depend upon demand intensity. Traffic falling in the left half of the diagram, where the demand curve is high, will bear a larger share of the joint costs—a share greater than the distance from the base line of the diagram to the line JE . The line TC is the result of apportioning the joint expenses according to the demand for transport service (or the ability of the traffic to bear transport charges), and represents the sum of specific costs and the share of joint expenses as assigned to the various kinds of traffic. Thus the area $OTYX$ represents the total operating expenses of the railway. It is the sum of the two arcas OSX (specific costs) and $OJEX$ (joint expenses). The line TC is drawn arbitrarily, and its course is necessarily indeterminate, except that we know that it must tend to follow the course of the line DD' and cannot lie above DD' to any considerable extent. (It is affected by relative expense of service, a factor which does not lend itself to graphic portrayal.)

The line RR' represents the railways' schedules of rates, and the area $ORR'X$ the total revenue from rates. The line RR' reaches a minimum where it intersects the specific cost line at R' . At no point can it be higher than the demand line DD' . Where it lies above the line TC , there is a profit for the railway, both in the sense that the rate exceeds the average total cost and that it exceeds the average total cost plus a share of the joint expenses assigned on the basis of demand. Where the rate line RR' lies below the line TC , there is a loss to the railway in the sense that the traffic concerned does not pay its share of joint expense.

3. The Problem of the General Level of Rates

We have dealt with the determination of particular railway rates—the rates to be charged for the transport of any particular item of traffic. We have seen that a large part of the total revenue of a railway must be raised by assigning to particular rates their relative shares of joint expense and contributions towards a return on investment. The question, therefore, which now confronts us is that of determining both (1) the amount of the total revenue, and (2) the

amount of the total return on investment, which are required. (The amount of the joint expense can be known from the accounts now kept by the carriers.) These total amounts are, as it were, the controlling accounts. They are, respectively, (1) the total sum which must be realized from the various particular rates, and (2) the total charge against rates which must be made to cover operating expenses and return on investment.

It will be helpful from this point of view to regard the nation as a unit and to consider it as having a demand for railway transport as a whole. The people of the country demand service of railways, and they must pay those who construct and operate railways for that service. Immediately, their payment takes the shape of particular rates paid for the transport of wheat, shoes, coal, lumber, etc., between particular points. Ultimately, their payment is the compensation for all the labor, capital, and business enterprise which go into the construction, maintenance, and operation of the railways. This total payment depends upon the general level of rates. Thus the general rate level involves a comparison of the income of the railways of the country, regarded as a single system, with their total expenses; and the profitableness of the railway business and the credit of the carriers are directly dependent upon it.

The connection between particular rates and the general level of all rates is fairly obvious. All the particular rates, taken together, must, when applied to the traffic which moves under them, make a general level of gross revenue which will enable the construction and operation of socially desirable railways. If the general level of rates is too low, some or all of the particular rates must be raised, and vice versa. The general level of rates is an absolute thing based on the necessity of covering the expenses of construction, replacement and operation. The particular rates represent the distribution of the general rate level among particular items of traffic.

(1) *The General Demand and Supply with Reference to Transport Service as a Whole.* From the social point of view, the general level of rates involves the problem of demand and supply with regard to railway facilities as a whole—say in a nation. On the one hand, the

demand arises chiefly from the fact that commodities are wanted more intensely at some points than at others. The railways provide the means for connecting points of production or surplus supply with points of consumption or deficient supply. Also they serve to equalize population and investment by facilitating the movement of men and capital. (Nor must we forget the political and military utility of the means of transport which promote social intercourse and political integrity, while providing an essential agency of defense and offense for the nation.) From these points of view, it is clear that the people of a country have many and intense desires for railway service, which are limited only by the existence of other agencies, such as waterways and highways.

These desires for transport are effective in the shape of "demand" to the extent that they are supported by the wealth and income of the nation, which provide the purchasing power. Today the people of China no doubt greatly desire improved transport service, but the purchasing power is not there.

The supply of railway transport is to some extent absolutely fixed by environment, depending upon the lay of the land, the supply of materials, etc. Generally, however, the supply of railways is limited only by expense, and there are two phases of expense to be considered from the point of view which we are now taking. These are the expense of construction and the expense of operation. Operating expenses have been considered in their relation to particular rates. It now remains to consider that part of operating expenses which is necessarily related to the general level of rates, but especially the cost of construction, upon which must, in the last analysis, depend investment and, in part, return upon investment.

Railways will not ordinarily be built unless the total income, existing and anticipated, is in excess of the total expense. With private ownership and operation, the income and expense must be measured in economic units and generally be expressed in terms of money. To use a common expression, it is "a dollars-and-cents proposition." To the extent that the government intervenes in the actual conduct of railway affairs, political values may be considered, and

be added to income or weighed against expense. Such values, however, are intangible and difficult to measure.¹⁰

With the exception of political considerations, the average rate on all the traffic on all the roads of the nation—that is, the general rate level—must be such that multiplied by the total units of transport service or traffic, the product, which is the total revenue, will at least equal total expenses, including a charge for the replacement of capital and a return on investment.

As already stated, the “general level” of rates must depend upon the demand for, and supply of, railway transport *in general*. That is, the general rate level must bring a normal balance between total supply and demand for all railway services. The general *demand* for railway transport depends upon the factors outlined above, but it is hardly possible to measure that demand. In fact, the demand for railways in general is a highly composite matter. The demand for coal mines depends upon the demand for coal; the demand for shoe factories depends upon the demand for shoes; but the demand for railways depends upon the demand for the transport of thousands of particular commodities between thousands of different particular places. This is partly what makes the problem of the general level of rates difficult, and as a practical matter we are forced to go back to the particular demands for the transport of various commodities and persons. Accordingly, demand is most important in the determination of particular rates.

The *supply* of railways in general depends upon the cost of constructing and operating railways, and here the investment in railways is the one great item which requires consideration. Let the cost of constructing a single railway, or all the railways in the country, be considered as the investment. Moreover, a part of the cost of operation depends upon the investment. The charge for depreciation and the replacement of capital, is largely dependent upon the investment figure. The allowance to be made as interest on investment is also thus dependent. It follows, therefore, that the chief problem in determining the general rate level is the determination of investment.

¹⁰ Cf. above, p. 206f.

This emphasizes cost, and it is true that cost is the factor which is most directly and immediately involved in the determination of the *general level* of rates. It has been seen that in making particular rates, cost plays but a limited part. It is in connection with the general level that cost finds its full expression. When it is said that rates must be such that they yield a fair return on investment, the statement means that the general level of rates must be such that it will cover the cost of construction and operation, together with a fair allowance for interest and profit.

How, then, shall the true investment in railways be measured and determined?

(2) *Basis for Determining Investment Cost.* In order to clear the ground, three distinctions are to be noted.

Purely economic value takes no account of right and wrong. For example, costs which have necessarily been incurred in the past construction of railways may have resulted in the existence of portions of plant or roadbed which do not now have an economic value equal to the cost. In such cases, it may be ethically just and in accord with the law that the investors should be allowed the value equal to the cost that was originally incurred. In this and similar cases, *non-economic values may be recognized*, but should be allowed only after distinct recognition of their non-economic character, and careful scrutiny of the honesty and wisdom of the original investment. (This is highly important, for the reason that it affords the best basis for general understanding and acceptance of so-called ethical and political values, thus giving them a degree of objectivity.)

Under complete competition, market value tends to equal expense plus a minimum return to capital and enterprise. It is based on the free play of demand and supply forces, and may be assumed to result in the maximum quantity of profitable business. If we accept this as a criterion of "fair" value, competition may to that extent be considered as having an ethical importance. Monopoly values, however, mean limited supply, and often are higher than the sum required to cover expenses and a minimum return to capital and enterprise. Accordingly, monopoly values are not apt

to have any ethical validity. It has been seen that the railway business is, to a considerable extent, naturally monopolistic, and in such cases it is to be borne in mind that competitive *rates or prices are not to be taken for granted as furnishing a "fair" basis for valuation.*

For reasons stated on pages 352-3, unregulated competition cannot be trusted to work satisfactorily in public-utility businesses such as railway transport. We depend upon competition, even when incomplete and imperfect, to regulate industries in which the monopoly element is not so large, and the public interest is less vital. In the more private manufacturing industries, honest speculators and promoters are welcome, and furnish a valuable part of the direction of competition; but in public-utility industries, such as railways, where the product is vitally essential to social welfare, the investor and the conservative manager are more important *than* the speculator and the promoter. Accordingly, *fluctuation in values and wide margins of profit are less desirable or defensible in the railway business than in many others.*

In view of these three points, judgment may now be passed upon several theories of valuation which have been proposed as a basis for determining the true investment.

(a) "*Earning capacity*" and "*present value*". For those who are used to reasoning concerning competitive and private-gain values, it is natural to propose that the value of the investment of the railways should be determined by taking the market value based upon their earning capacity. A moment's reflection, however, will show that for rate-making purposes such a basis of valuation is doubly bad.

In the first place, earning capacity partly depends upon gross earnings, which, in turn, depend upon the general level of rates. To take an investment figure based upon rates for the purpose of determining the reasonableness of rates, is to reason in a circle.

In the second place, the earning capacity is partly dependent upon the amount of the operating expenses which must be deducted from the gross revenue to arrive at the net. But these operating expenses partly depend upon the investment. This is true of depre-

ciation charges. For rate-making purposes the railway plant cannot be taken for granted, but, as will appear, the honesty and efficiency of the construction of the plant must be considered, to say nothing of its social utility.

In short, the "earning capacity" theory begs the question of the valuation for rate-making or price-fixing purposes by assuming a certain level of rates or prices, and a certain level of capital replacement charges, such as depreciation.

When the question is merely one of condemnation or sale of an operating property, the market value based on net earnings may properly be used; but even there, the wise investor would have to consider the possibility that the government might step in and regulate rates and accounting methods in such a way as to reduce the earning capacity and the value of the investment.

(b) "*Cost of reproduction*" or "*cost of duplication*." Some public service commissions and several courts have adopted cost of reproduction as a basis for determining the true investment in a public utility. This proposal is one that is very commonly made, and which will require the most careful study. The cost of reproduction may have either one of two meanings. It may mean the cost of the identical plant; or the cost of a plant which is equally efficient, but one which may differ more or less from the existing one in form and arrangement. Also, the cost of reproduction may mean either the cost of a new plant, or the cost of the existing plant as depreciated. This is not the place to go into details connected with these various meanings, but it is merely pointed out that the concept of "cost of reproduction" is not a clear-cut one and requires accurate definition. This general basis, however, will be examined briefly without reference to the details of the various shades of meaning.

Perhaps the first question to arise in one's mind concerns the unit prices which should be taken as the basis for determining the cost of reproducing the plant. Shall we take current prices, or those which were originally paid? Shall we take the prices of any one year, or of a series of years? Perhaps some fair basis could be arrived at in each particular case, but it can readily be seen

that the procedure must be more or less arbitrary.¹¹ The determination of unit prices presents great practical difficulties.

The second question to arise in considering cost of reproduction, concerns the allowance to be made for the costs which were originally incurred. Some of the original costs may have been necessary and incurred with all honesty and prudence, yet they would not be necessary in reproducing the plant. Grades, perhaps required by law, once made need not be made over again. Should the cost not be allowed in investment? Moreover, the cost-of-reproduction basis might cause unjust risk to investors, since valuations made in periods of relatively low prices would result in investment figures which would be unfair. (To take the average price for a series of years would be tantamount to an abandonment of the cost of reproduction principle.) There are "starting expenses" which are necessary to create and develop traffic. There are certain organization and legal expenses which are required at the beginning of an enterprise. There are the risks of a new enterprise for which the enterprisers deserve rewards—rewards for plans and foresight.

The conclusion must be that cost of reproduction would not make due allowance for all the necessary original costs and expenses.

Under the cost of reproduction theory, how would allowance be made for intangible items of property value? There are important items in the investment account which would not find expression in any costs of *reproducing* the plant. One of the most important of these items is the "seasoning" of the roadbed. There are changes in alignment, restoring washed banks, rebuilding after wash outs, and raising roadbed and track. On such operations thousands of dollars per mile of line may have been expended, yet they would not be required in reproducing the plant.¹²

¹¹ Particularly difficult is the case of real estate. In determining the cost of reproducing a railway, it has been proposed to base the prices allowed for land upon the value of abutting land. In many cases, however, this would not be fair to the carriers, as railways frequently have to pay "hold-up values" for real estate. In Wisconsin, for example, it was found that railways paid for land over 300 per cent more than the consideration shown in the records of the registrar of deeds.

¹² The National Association of Railway Commissioners has said, "There is an appreciation in the value of the roadbed due to what is termed 'seasoning', the

There there is the intangible item of "going value". This represents necessary expenses incurred in building up the business so that it will pay more than operating expenses, including depreciation and fixed charges, and will yield a normal profit to cover the risk of the enterprise. An established business is worth more than the cost of the various separate parts, and anyone choosing between the cost of reconstructing a new line or buying an old one would pay more for the latter. Here again, cost of reproduction does not allow for an important intangible asset which should be recognized from the social point of view.

In short, the cost of reproduction is neither what was honestly and wisely paid by the original investors, nor what new investors would be willing to give for the property with its various intangible items of value and its established business. To cap the climax, it furnishes a one-sided theory of valuation, for it gives no consideration to the social utility of the railways or other industry. It is not actual cost; nor is it justified by any consideration of demand.¹³

(c) *Original cost.* The third chief method of determining the value of the investment, is that which is based on original cost, including all additions and betterments. The original cost would include the actual expense of all steps necessary to the development of the present efficient service of a railway or other company, from the necessary "starting expenses" which were honestly and prudently made, down to the latest expenses, such as bringing a roadbed up to required grade and width. Original cost is something actual. It is not a hypothetical thing, but is the sum of expenses actually incurred. It has a basis in history, and is a record of the

settling of embankments requiring a filling in to bring up to required grade and width, clearing out and widening cuts, etc., which require an unusual expenditure during the first few years, all of which adds to the value of the roadbed and must be taken into consideration in the valuation". (Report of 1910, p. 142.)

¹³ It, therefore, seems that economists must support the utterance of Judge McCormick, who, in *Metropolitan Trust Company v. Houston and Texas Central*, said: "A system of rates and charges that looks to a valuation fixed on so narrow a basis as that shown to have been adopted by the Commission, and so fixed as to return only a fair profit on that valuation, and which permits no account for betterments made necessary by the growth of trade, seems to many to come clearly within the provision of the 14th amendment". (The 14th amendment prohibits the confiscation of property without due process of law.)

facts attending the development of the property. More than that, it allows due regard for ethical considerations, for under it the appraiser should take up the question of risks and obstacles which were confronted in starting the enterprise. It considers the whole life of the plant, and, therefore, makes it logical to take account of the relation of the plant to the future.

Before passing final judgment on this basis of valuation, however, one should consider how it would be applied. In the first place, the tangible physical items of the investment would be covered by going into the actual construction records wherever possible. It has been found in practice that field surveys made for determining cost of reproduction are frequently inaccurate, as original ground lines change, bridge piers cannot be seen, etc., etc. Consequently, the only accurate way to proceed is to take the records of actual construction. When these are not available, of course, it is necessary to make surveys to determine the work done and to apply the unit price which prevailed at the time of construction.

As to intangible items, under the original cost method the appraiser must consider the legitimate promotion expenses, including organization and legal expenses and discounts on securities, when these are honest and reasonable. The economist would be the last to deny the justice and expediency of allowing compensation for business plans and foresight. Interest on investment prior to the receipt of profits would be allowed. Freight on construction materials would be another legitimate item.

"Going value" is not to be allowed in the sense of a "value of created income," for the reason that income comes from rates and rates cannot be assumed when we are determining a valuation for the purpose of making rates. *But in another sense, going value must be allowed for.* A railway or other plant must have cost more as a going concern than the sum of its separate parts. A working organization has been built up partly as the result of legitimate advertising which may be both educative and productive. There are expenses involved in getting business; there are early losses and operating deficits to be covered.

Differential advantage. Is there any other element in the investment account of a railway or other plants which must be included in order to arrive at a fair basis for determining a reasonable general level of rates or prices? Does the original cost basis as briefly outlined in the foregoing paragraphs cover all items of investment upon which the investors are entitled to a return? It appears that all the many parts of the construction, maintenance, and operation would be provided for, but there is one item which no cost figures would cover. This is the valuation of the differential advantage which some companies possess on account of *superior location*. Between Chicago and New York, for example, there are several lines of railway, no two of which are equally advantageous. One of the roads must have the highest operating expense per ton-mile in hauling goods between those points, and another must have the lowest. In spite of this difference in expenses, practically but one rate can be charged for hauling the same commodity between those points, and it follows that the road with the minimum expense must make a larger net return than the roads having higher expenses. This higher net revenue, *in so far as it is due to the natural advantages of route*, is a measure of what is known as the differential advantage. It is closely similar to land rent.

It may be argued that this differential advantage is not a thing in which a company should have property rights—that no private enterprise is entitled to capitalize the amount of the differential gain. But as long as we have private property, it is difficult to say how we could do anything else but include the capitalized value of the differential advantage in the valuation of the company's investment. The expenses of the least advantageously located road or plant must be allowed for, if we are to assume the various lines to be necessary. These expenses reflect not only the original cost of investment, but also the natural disadvantages of the marginal concern. There must be a single rate, and there results a permanent differential advantage. So long as we allow individual land owners to enjoy the increased values which result from superior location, we can but allow the corporations to do the same.

Such an allowance, however, has no practical bearing upon rates

or prices. The general level of rates, for example, must be determined with reference to the least advantageous one of the carriers which is socially desirable, and must cover the highest costs and expenses which are socially necessary. Rates, in other words, are determined with reference to the marginal expenses, and it follows that the differential advantage of the more advantageously located railways is a *result* of their superior location and has no causal effect upon rates.

Items excluded from original cost. A few special problems arise in the application of the original cost basis of valuation. Thus, there is the much mooted question of *franchise values*. Should a company's investment account include an item such as "value of franchise"? From the point of view of valuation for rate making—which, it will be remembered, is widely different from valuation for sale or taxation—the answer must be in the negative. The value of the franchise comes from net earnings, which, in turn, depend largely upon rates. Thus, the same objection applies to the inclusion of the franchise item that applies to the earning capacity basis. Certainly, the franchise value is not based on cost.

Closely related to the franchise idea, is that of *public aid*. For example, many railways have received large grants of land and have been assisted in other ways. Such items do not represent cost, but are gifts of the public, and the public should not be asked to pay rates required to yield a profit on its gift.

There are those who have advocated the inclusion of *goodwill* in valuations. In a competitive, private-gain business there might be some excuse for this procedure, although even in such business the item would be regarded with suspicion. Under imperfect and incomplete competition, as in the railway business, goodwill cannot properly be included in the investment account. In the first place, it is a competitive factor based on the idea that consumers have a choice, and that the possession of their patronage is therefore an asset. A business such as a railway, however, is a partial monopoly, and is obviously so for most "local" traffic. Accordingly, the concept of goodwill does not properly apply to any great extent in the railway business. In the second place, goodwill is generally not

permanent or certain enough to be capitalized and made the basis of stable rates.

The upshot of this examination of the bases of valuation is that original cost, as here outlined, furnishes the true test. In the case of roads or plants which are advantageously located, however, there must be an allowance to cover the value of their differential advantage.

(d) *Necessity of applying costs honestly and prudently.* It will have been noted that at several points in the foregoing discussion the idea of cost, or expense, has been qualified by using the words "honest" and "prudent", or their equivalents. The courts have indicated that costs are admissible as the basis for valuation for rate-making purposes only when they have been incurred by an honest and efficient management. For example, in the *Wellman case* (143 U.S.) it was stated that if the court were fully advised as to the disposal of earnings, "it might clearly appear that a prudent and honest management would, within the rates prescribed, secure to the bondholders their interest and to the stockholders reasonable dividends."

This intimates that expenses which are imprudently or dishonestly made should not be recognized. It is safe to say that a "reasonable" original cost could not include either an exorbitant promoter's fee or an item of "interest on investment before profits" which covered an unreasonably long period. There would be a limit to the payment of extraordinarily large salaries. Expenses incurred for the purchase of property which is not reasonably necessary or advantageous for the conduct of the business might be disallowed.¹⁴

Another case in which the idea appears, although the faulty cost of reproduction basis is taken, is that of *Steenerson v. Great Northern* (72 N. W. Reporter 713):

If a railway is built and operated wisely and economically, if it is located where public need requires it, where there is business to justify its existence, and constructed so as to be fit and well adapted for the business which it aims to accommodate—it should be entitled to return as good interest on the cost of the reproduction of the road as capital invested in the average of other lines of enterprise.

¹⁴ On this point see *Capital City Gas Light Co. v. City of Des Moines*.

Thus the original cost idea is modified to mean original cost to the extent that such cost has been honestly and prudently incurred.

To sum up, the test of a true economic valuation of investment in such cases as railways, is really twofold. On the one hand, it must be sufficient to cover all original costs; on the other hand, only such investments should be recognized as are made in plants which are honestly and prudently built.

C. *The Theory of Government Regulation in a Case of "Monopolistic Competition"*

According to the degree of monopoly in an industry, is the possibility that government regulation will be required to supplement or replace competition. *Pari passu*, political and ethical values are likely to be blended or mixed with economic values. At almost every turn in the foregoing discussion of railway rates, it has appeared that ethical or political considerations are involved, and that government regulation must be invoked, either to enforce some recognition of these non-economic "over-individual" values, or to counteract monopolistic tendencies. Thus there is found here an excellent illustration of how "inter-individual" and "over-individual" values lead to coercive "ideal values"¹⁵ through social action. In fact, the "public-utility" type of service which railways perform is attended by so considerable an element of monopoly, and is affected with such a broad social importance, that *government regulation has come to be a normal part of the rate-making process.*

Since 1920, when the Transportation Act was passed, government regulation has been the dominant factor in the United States, and the Interstate Commerce Commission is empowered to name definite rates. The railways cannot change an interstate rate without the approval of the Interstate Commerce Commission. The same body has had great power over valuation of the railway investment. The practical question, therefore, which confronts the economic theorist, is, What basis should the government use in fixing rates or apply as a criterion in approving rates proposed by the carriers?

¹⁵ For the significance of these concepts, see above, pp. 174f., 189ff., and 194ff., where the various phases of value, economic and non-economic, are briefly analyzed; and the relation of price-fixing to value, is pointed out (pp. 191, 201f.).

1. Non-economic Factors

An economic standard of price-fixing or rate-making is one which makes everything depend on a balance of demand and supply intensities which in the final analysis reduce to terms of utility and cost. It considers the expenditure of labor and the use of land and capital required, and against these sets the net income to be derived. It does not inquire whether the building of a railway or the amount of a rate is right or wrong, or whether politics makes it expedient. The question is, Does it pay?

It is conducive to clear thinking, however, frankly to recognize that in making rates or fixing prices, other than economic considerations are required. During the war, the public defense was a consideration which transcended purely economic factors, and rates were made with reference to the needs of the country. For example, very low rates were made on manganese. Too often, however, political considerations are dangerous in rate-making. Under the influence of a strong political group in Congress special rate reductions have been made on hay, grain, and livestock, for which no economic justification is possible, and which certainly amount to discrimination. Almost always when the real question is one of political expediency or right and wrong, there is an effort to justify the proposal on economic grounds, with the result that thinking becomes muddled. The proposal is made first, and then arguments are scraped together in its defense.

Under the law, a common carrier cannot at will abandon operation, and wind up its affairs, for it is regarded as having assumed obligations to society which it must carry out. Thousands of homes have been built along its line, and industrial arrangements have been made on the assumption that it will continue to operate.¹⁶

In dealing with the relative reasonableness of rates on particular

¹⁶ For example, the Kansas City, Mexico and Orient railway, being in a bankrupt condition, once sought to abandon its property and to cease operation. Even in the relatively undeveloped territory served by that road, however, it was deemed imperative that it continue to operate, and strenuous measures were taken to reorganize its affairs in order to prevent the widespread losses and hardships which would be suffered by the little communities and farms dependent upon it.

commodities, and with honest and prudent investment, ethical values are bound to be considered.

While recognizing the importance of such ethical or political considerations, we find that in the majority of cases economic considerations prevail; and that where other considerations arise, it is essential that they be distinctly stated and compared with the economic considerations. In this way only, can confusion of thought be prevented. When it is proposed to make a rate reduction on the ground of the "rights" of some community or section, the nature and basis of those rights should first be clearly stated. Then the balance between cost and income should be struck, and finally a decision should be made after comparing the desirability of preserving the alleged rights with the net cost of making the change.¹⁷

Accordingly, the problem of fusing various social values is especially apt to arise when "monopolistic competition" has to be relied upon.¹⁸ In such cases, some representative of the general point of view of society must act if the different values are to be synthesized in a way which will reflect all aspects of individual motivation.

But any rate-regulating authority must have some principles of rate-making. Economics, therefore, can contribute to a theory of value or price "fixing" by authority, drawing both upon its theory of monopoly price and upon its theory of competitive value.

2. Economics of Government Regulation

Even though regulated and subject to some competition, the railways are partial monopolies. Government regulation does not make them any less so. What it does, or may do, is to make the discriminations which arise under the principle of monopoly class-price more reasonable than they otherwise would be, and to eliminate the maximum-net-revenue basis of discrimination. The government, if it gives due recognition to economic values, says to the railways, "You may put this commodity into your 'first class' and charge it accordingly high rates, and you may give the other commodity a special low 'commodity rate'; but you shall do this not

¹⁷ Cf. above, 197-207.

¹⁸ Cf. above, p. 201.

arbitrarily and for the mere purpose of increasing your net earnings to a maximum, but shall do it because it seems reasonable, taking into consideration the estimated relative expenses as well as the ability of the traffic to bear the rates."

But while, in practice, government regulation must proceed upon an understanding of monopoly tendencies and an aim to correct them, those tendencies get their significance largely from the competitive equilibrium from which they depart. And it is this equilibrium which supplies the basis for correction.

3. Principle of Competitive Value the Best "Basis"

The thesis of this chapter is that the most practical, expedient, and economic railway rates are those which would be established by competition, if competition could work effectively in the railway business. While recognizing that direct competition between railways in rates does not work, it is also to be recognized that no economic agency is sufficiently wise and unbiased to determine values on an arbitrary basis. At best, men's judgments are colored by predispositions and prejudices, and governmental bodies are subject to political influences.

The wisest captains of industry know that they cannot safely undertake to substitute their individual judgments for the forces of demand and supply. The responsible officer of a great industrial corporation once frankly acknowledged to the author that prices fixed by agreement within the industry would be unwise, for the reason that human intelligence would not enable the determination of a price which would satisfactorily equilibrate demand and supply. Said he, "The price of our product was recently established on too high a level, with the result that there has been overproduction and we are now paying the penalty of a severe reaction in the market. I see no way of determining a correct price other than to put our goods on the market and sell them for what they will bring. The conditions affecting production and consumption are so complicated that no man can say with certainty what the value of his product is."

Of course, to work out the true objective value, the forces of

demand and supply must operate under intelligent direction, and notably each producer must know his expenses and the technique of his business, including markets and methods of distribution. Under abnormal conditions of panic and ignorance, free competition may lead to the establishment of abnormal economic values, much as disturbances in temperature or currents of air might lead to the registration of incorrect weights by a delicate balance. But the objective determination of economic values in a competitive market is the ideal, and it is believed that the only correct principle of rate-making lies in an attempt to approximate such a determination.

By analyzing and weighing the factors in demand and supply, even in as complicated a matter as the determination of railway rates, we may approximate an equilibration of those factors that will result in rates which may with confidence be said to be what competition would establish if it could work.

Under "monopolistic competition", the best that could be done by a rate-regulating body would be to study all the conditions here briefly outlined, and, by comparison of any rate in question with rates which had proved satisfactory for similar commodities, to seek an approximation. The gist of the matter is that unless the foregoing points are roughly allowed for, rates will almost certainly be made which are greater or less than what would be established under complete competition, and which will, consequently, fail to provide the basis for the economically correct equilibration of demand and supply.

This appears to be as precise a formulation of the economic principle of railway rate making, or price determination under monopolistic competition, as can be given. A study of the Interstate Commerce Commission decisions will demonstrate that in an unsystematic way that body has followed a course similar to the one outlined above. The Commission has said that, in determining a reasonable rate, it takes into consideration the following points listed in the first column. The points in the second column represent an attempt to translate these into terms applicable to manufacturing industries.

The earnings and operating expenses.	Sales and expenses.
The rates on the same commodity on similar roads.	Prices of the same good in other markets under similar conditions.
The relative quantity of through and local traffic.	Integration of production, and control over market.
The proportion of the particular commodity to the remainder of its class of traffic (through or local).	Relation to other products produced jointly.
The market value of the commodity.	The price of the raw materials.
Change in the price of articles entering into the cost of producing the commodity.	Changes in the cost of raw materials.
All circumstances affecting the traffic.	All conditions affecting the volume of production, especially the demand.

In another place the Commission has said that it will consider the history of the rate, the reason for its establishment, the nature of the traffic, and the competition between shippers and communities, and "all other pertinent evidence". In these statements, can be seen an emphasis of the problem of relative reasonableness of rates, and a vague general sense of the idea that relative reasonableness will be based on various factors affecting demand- and supply-prices as analyzed in the foregoing pages. Also, there is the idea of an absolute minimum set by operating expenses; which somewhat limits the field of ethical and political values.

4. Harmonizing Uniform Rates or Prices with Diverse Costs

Thus far this chapter may be briefly summed up in the conclusion that, under "monopolistic competition", the general level of rates or prices in an industry, as distinguished from particular rates, depends chiefly upon the investment in plant and equipment; and that the investment is to be determined by the amount of those original costs which are honestly and prudently incurred. It remains to show how the general level of rates is related to the rates of the different sections of the country or different companies; for, while the concept of a general level is real and helpful, it is nevertheless true that in practice the general level is distributed among plants

whose original costs vary widely. Indeed, investments in the different parts of a single railway system may show great dissimilarity. Naturally, then, the question arises, If the general level of rates is based on original cost of investment, how can there be any uniformity in rates among the different roads or on different parts of the same road?

The cases in which the general level of rates does not cover costs, even indirectly or in the long run, may be dismissed. The costs of such railways mean that investments have been made which are unwise or inefficient, and these investments must be liquidated on the basis of the general level of rates. The remaining cases all fall into two groups: (1) those roads whose original costs are directly compensated or more than compensated by the general level of rates, and (2) those roads whose costs are only indirectly covered in the long run. It is concerning the latter group that the question arises.

(1) *Branch Lines*. The distribution of charges need not be uniform in proportion to investment. If it be clear that indirectly or in the long run the aggregate cost of a railway system *as a whole* is being compensated by the general rate level, without there being any net loss, then certain parts of the system may be operated with economic advantage even though the rates directly assignable to them do not yield a return on the cost of investment in those parts. Branch lines or feeders furnish an example, which somewhat resembles cases of by-products, or cases of integration by a manufacturing concern with the sources of raw materials or with marketing units. If the greater volume of traffic which they bring to the main lines with which they are connected, enables a reduction in the average operating expense per ton-mile on the main line, the amount of the reduction—and the gain arising therefrom—may be imputed to the branch line and be offset against its cost and expenses.

This reasoning, however, must not be overworked. It is sound economics to conclude that the *local* traffic of the branch line "ought" to be separately considered, and be made to pay its specific expenses and something towards the general expenses which are

assignable to the branch line. To this extent the branch should "stand on its own bottom."¹⁹

(2) "*Differential Lines*" or *Plants*. There is also the problem of "differential lines"—that is, independent lines which are relatively weak or disadvantageously located—which raises the question, Is the same general level of rates to be charged on different competing lines in spite of their different costs and expenses? It has been maintained by some that one transportation route should never be allowed to take from another, merely as a consequence of competition, traffic which that other route could carry at less expense.²⁰

In this argument there is an element of truth and also an element of error. It is true that the increased average expense per unit of product which would result from the participation of the circuitous route—the high-cost producer—would have to be considered and weighed against any advantages arising from such sharing in the business. The greater expenses set a limit and must be carefully considered. But it is also true that there are certain advantages which may arise from allowing the more disadvantageously located road to share in the traffic. The Interstate Commerce Commission has said that "to decree that traffic should always move by the

¹⁹ This raises the question of the practicability of imputing gain to a non-profitable line. The only costs known are totals covering both local and through traffic. We know the total costs on the unprofitable branch line, also its total income, and the total amount of its loss. But can we figure the off setting gain to the other lines from the through traffic which it brings to them? If the only change resulting from the construction of the branch line were increased volume of traffic to the main line, the reduction in the average expense per ton mile on the main line would measure the gain. But besides the through traffic which moves from the branch line to the main line, there is the local traffic of the branch line to be considered. This local traffic should at least pay its special costs and contribute something towards the general expenses of the branch line. Here comes the difficulty of determining the net gain from maintaining the branch. It seems a practical impossibility to determine separately for the local traffic its revenue and expense and loss. If this can be done, however, and only the loss of the branch on the through traffic is charged against the gain made by the main line, the arrangement in question can be fairly tested. Only as the local traffic of the branch pays for itself, while the gain of the main line on traffic interchanged is greater than the cost chargeable to that through traffic, is the arrangement economically sound.

²⁰ The Grand Trunk, for example, it has been held, should not be allowed to take freight from Chicago to Boston which the New York Central could haul more cheaply.

cheapest road would be to entirely eliminate competition, which, within reasonable bounds, is for the interest of the general public." There is undoubtedly a certain kind of competition in service and between markets which it is desirable to foster and which requires the existence of alternative routes. Furthermore, it is to be recognized that allowing the relatively inefficient carrier to participate in moving the traffic may cause a reduction in the average ton-mile expense of that carrier by giving it the volume required for its most economical operation.

As a rule, however, it would probably be found that it is most economical to let the carrier which operates at the least expense take all the traffic which it can accommodate; that is, to let the low-cost producer have the business. A good many thinkers have concluded that there are too many railway lines in some parts of the country. It is hardly practicable to compel an inefficient carrier to forgo competition for traffic; but it is possible to refuse to recognize its high expenses as a factor in determining rates except to the extent that it is required to handle the traffic.

(3) *Different Classes of Traffic or Products.* A group of questions similar to the foregoing applies to the relation between the general level of rates and the charges to be made for different classes of traffic; that is, the relation between the average price of a group of interrelated products and the prices of the several individual products. May the general level be maintained while some classes of traffic or products pay more than their pro rata share of the expense, and others pay less? (Here the problem of determining the general level of rates merges into that of particular rates.)

It has been shown to be economically expedient under some circumstances to distribute fixed and joint expenses over the different items of traffic in proportion to the intensity of the demand for their transport. Now, however, in the light of the discussion of the general level of rates, it can be seen that there is danger of going too far in this direction, and it will be well to note a series of limitations upon the discrimination that exists when one branch of traffic, or one product, is charged more than its pro-rata share of all operating expenses and fixed charges.

In the first place, it may be laid down as a general rule that, to the full extent that demand permits, all classes of traffic should in the long run bear²¹ their full pro-rata share of all the expenses and charges necessary to replace, maintain, and operate the transport agencies.

In the second place, there are unreasonable discriminations—discriminations among commodities, among shippers or consumers, and among places—and there is danger of placing an undue burden on some classes of traffic when other classes are hauled for less than the pro-rata share of all expense.

In the third place, it seems that there is no logic in the idea that, because some traffic is developed earlier than other traffic,²² the latter should be regarded as a separate thing which is taken on for what it will bring merely as an adjunct to the original traffic. The plant exists for all the traffic or production, and if it must be enlarged, it is because the *total* traffic or production, considered as a unit, is too great to be handled by the original plant. There is no economic relation between the earlier and the later units.

In the fourth place, it must not be assumed that all traffic has to move, and that if any part of it will not move at a rate sufficient to pay its full share of expenses and costs, the rate must be reduced. It may well be that society would be better off if some goods did not move at all—if the elimination of such traffic would enable the carriers to operate without loss. Certainly, this is true when the question is one concerning the transport of goods to remote points which might be supplied more economically from nearby sources.

Finally, there is danger of maintaining a larger investment in plant and equipment (railway facilities) than is economical, in order merely to accommodate non-profitable products. One of the most plausible arguments in favor of ignoring cost in making different rates on different classes of traffic is to urge that, since a railway has unused track and equipment, it must therefore take on

²¹ Would tend to do so under competition.

²² In manufacturing, economists sometimes talk about earlier and later units of produce. The same criticism here presented, applies.

additional traffic no matter how little it will pay, because such traffic will help defray the expense of maintaining the excess facilities. But, when confronted with this argument, we must distinguish two cases:

1. When the situation arises with regard to surplus capacity (empty back hauls, seasonal surpluses of equipment, or the existence of reasonably anticipated growth in traffic), the argument may be sound; for in these cases the excess facilities are economically justified and the extra traffic really helps to pay necessary expenses.

2. When, however, the excess of facilities arises from uneconomic construction or from the growth of superior competitors which have diverted traffic, the argument is not sound; for here the excess is not necessary and the so-called fixed costs are not economically justified. A single railway ought not to maintain such equipment that it will be necessary to haul goods for less than expenses in order to utilize its full capacity, and the same principle applies to the railways of a section or of the nation as a whole. Competition would tend to eliminate such excess capacity.

To sum up, then, the conclusion is that discriminations in rates based on differences in demand, must be made, and that the general level of rates must be maintained by charging different particular rates on different classes of traffic; but that in making such discriminations, cost cannot be ignored, and that as nearly as possible each railway and each class of traffic should therefore be charged with its full pro-rata share of all expenses, including capital charges. Thus, we bring together the discussion of particular rates and of the general level of rates.

D. Final Restatement of Principles of Rates or Prices under "Monopolistic Competition"

It is now time to bring together in a concise way the chief factors which have been found to govern the determination of railway rates, or of prices, under monopolistic competition. This means the formulation of a general theory of rates, which may be taken as a theory of value under the complicated conditions that obtain in a public-utility industry in which a large amount of monopoly is mixed with competition.

The conclusion has been reached that particular rates or prices and the general level of rates or average of prices in an industry,

are determined as parts of the same process, which, in the railway business, is the process of evaluating transport service. Through the necessity of maintaining the general level of rates or prices, the greater part of the cost of production exerts its influence upon particular rates or prices; through particular rates the composite demand for the various particular services performed by the railways is brought to bear upon the general level of rates. On the one hand, *the cost factors which limit the supply of railway facilities are so largely joint that they can be effective only as regards the general level of rates*, and the conclusion has been reached that the basis of determination for the general level is the original cost of investment when the investment is honestly and prudently made. On the other hand, *the demand for transport service as a whole is merely the sum of thousands of particular demands, and is so composite a force that it can be brought to bear only through the particular demands which chiefly determine particular rates*. The whole scheme of rate determination may be expressed diagrammatically as shown in Fig. 17.

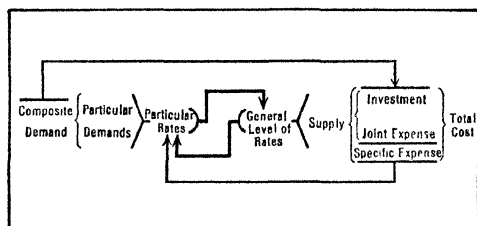


FIG. 17

The diagram, read from left to right, shows that composite demand, through its component particular demands, is brought to bear upon the determination of particular rates. At the same time, it is set against the total cost of supplying transport service; and, particularly, the cost of investment must be weighed against that demand. Through particular rates, demand is brought to bear upon the general level of rates, while at the same time the general level exercises a control over the sum of particular rates. This mutual action and reaction is expressed in the diagram by the two heavy

arrows which connect the two phases of the rate structure. The supply of railway transport is limited by the cost of investment and operating expenses, which together make up the total cost of constructing, maintaining, and operating the railways. The capital charges pertaining to the replacement and maintenance of investment items, and the joint expenses, can be brought into relation with particular rates only through the general level of rates. The specific expenses, however, which can be directly assigned to particular transport services function directly and immediately in the determination of particular rates, as is indicated by the light line at the bottom of the diagram which connects the two.

Possibly another way of summing up the complicated interaction of demand and supply, may serve further to clarify the subject, though it does not add to or alter in any way the foregoing statement of the case. Accordingly, there is presented next a diagram (Fig. 18) which serves to focus attention upon the problem of determining particular rates or prices—the problem which arises most frequently in practice.

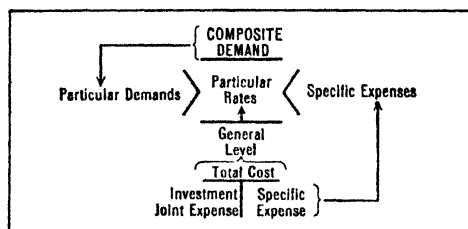


FIG. 18

This diagram expresses the idea that particular rates or prices are determined between the level of composite demand for the product and the necessary general level of rates or prices in the industry. The former sets a broad general maximum; the latter, an equally broad and general minimum. Between the two lies the scale of particular class and commodity rates, or prices. In the railway case, the particular rate charged for each particular transport service is immediately determined by the interaction of the

particular demand for that service and the specific expense chargeable to it. This diagram brings out the fact that in such cases demand for the service as a whole—the composite demand—is brought to bear upon particular rates or prices only in the shape of a particular demand for some given kind of service; while the only part of cost and expense which functions immediately in the determination of particular rates or prices, is the expense specifically assignable to the particular service involved. *The total cost of the service, including replacement of plant and equipment, is the basis upon which must rest the general level of rates or prices, and through the general level it serves as a general controlling basis of particular rates or prices.*

In this summary statement concerning demand and supply, and the "process" by which an equilibrium is attained, it has been possible to follow the pattern of analysis used in treating competitive economic values. A knowledge of (1) the technology of railway transport, combined with (2) experience with railway rates, and supplemented by (3) the law of economic motivation, according to (4) a true social point of view, enables us to begin an application of the general theory of value determination.

But as we proceed, we find elements of monopoly or incomplete competition which are so important that we are compelled to introduce at least two other theoretical aids. One is the suggestion, developed in the discussion of different kinds of value²³ and non-economic factors,²⁴ that ethical and political values may be fused or synthesized with economic values, and that in certain cases economic value is the basis of ethical and political values. The other is the public-utility factor, which introduces regulation by the state. When unit costs and expenses are not specifically assignable, competition becomes difficult, and such competition as exists often becomes discriminatory and unfair. Then, in such important cases as railway transport, the government must act, and by skillful cost accounting,²⁵ supplemented by market studies, can go far toward

²³ Above, pp. 194ff.

²⁴ Above, pp. 204ff.

²⁵ See L. H. Haney, "Railway Statistics", *Quart. Pubs. of Amer. Statist. Assn.*, XII, 199-213 (1910).

determining such reasonable allocations of expense that they approximate competitive experience, and readily become accepted by carriers and shippers. Similarly, when ownership of limited natural advantages, and absence of fairly complete competition in rate determination—and therefore revenue—prevent a general recognition of an objective valuation of plant and equipment, the government must apply the lessons of competitive experience in determining a “fair value” for the investment.

In other words, one aspect of “monopolistic competition”, in the railway business as elsewhere, is the existence of certain differences in rates (prices) which do not in practice tend to correlate precisely or necessarily with differences in cost and expense. Thus, in the case of public utilities, it becomes logical for some agency representing the society served, to regulate rates according to some consistent and non-discriminatory correlation with the cost and marginal utility of the service, such as would exist in a competitive equilibrium.

In a broad way, such action tends to preserve competition, either by facilitating it, or by making it “fair”, or by both means.

One important point which is clarified by the theory of railway rates, is the relation of price to demand and supply. A very persistent source of the doctrine that prices determine prices, is found in the argument that railway rates are price-determined. With apparent acuteness, it is argued that rates determine prices; but that prices, by determining the volume of goods sold, determine traffic, unit expenses, and therefore rates! This hoary circle is typical of “price economics” and the opportunity-cost doctrine. But we have found that it is unnecessary and illogical to assume the price of the good at its destination. At that end, all we need is the demand intensity, or a schedule of buyers' offers, and these do not depend upon price. It is the subjective value of the good, and the difference between the rate at which the railway offers its service and the primary demand schedule for that service, which count. The payment of the objective rate, and the shipment of the good, are results.

Chapter VIII

THE "VALUE OF MONEY"¹

IMPORTANCE OF MONEY IN ECONOMIC THEORY

Theories of value come to a head in the problem of money value.

For example, it will be found that those who assume the quality of value, and in one way or another seek to explain particular values or changes in value by means of "opportunities" or mathematical equations, are avowedly or tacitly forced to deal with "prices" which they define as values "measured" or "expressed" in money.

But if "opportunities" or alternatives are price-determined,² and if the simultaneous equations depend for their solution upon an assumption of the value of money,³ it becomes apparent that the

¹ On the value of money, the following works may be consulted with profit. They cover various points of view, but the list is somewhat weighted by the author's judgment as to the relative importance of the various sources.

B. M. Anderson, *The Value of Money* (1917).

E. Cannan, *Money*, 5th ed. (1926).

T. M. Carver, "The Value of the Money Unit", *Q.J.E.*, XI (1897), 429ff.

H. S. Ellis, *German Monetary Theory* (1934).

T. Greidanus, *The Value of Money* (1932).

D. Kinley, *Money* (1901).

J. L. Laughlin, *Principles of Money* (1902), *Money and Prices* (1919); *New Exposition of Money, Credit, and Prices* (1931).

L. v. Mises, *Theory of Money and Credit* (1936).

David Ricardo, *The High Price of Bullion, a Proof of the Depreciation of Bank Notes*, 4th ed. (1811).

N. W. Senior, *Three Lectures on the Value of Money* (1840); *Three Lectures on the Cost of Obtaining Money* (1830).

Adam Smith, *Lectures on Justice, Police, Revenue, and Arms* (1896), Part II, Ch. 2, § 8 and 9.

F. M. Taylor, *Some Chapters on Money* (1906).

H. P. Willis, "History and Present Application of the Quantity Theory", *J.P.E.*, IV (1896), 419.

² E.g., H. J. Davenport.

³ E.g., G. Cassel.

final theory of value is hiding behind the concept of money. Thus money has become the root of much evil in economic theory.

Certainly the confusion of "price" with "value" has been responsible for much misunderstanding. It is possible to fix prices, but not values. It is possible to add and average prices (in a sense), but not values; and the concept of a general level of prices has some significance, but that of a general level of values does not. And the difference lies in the fact that money may be used as a general sort of "price good" for the measurement and expression of the relative values of other goods. Labor, as Adam Smith said, may be the first "price" paid for all commodities; but that should not be thought to have any necessary bearing upon the *value* of commodities. It merely raises the question, What value has labor? Just so, we must now ask, What explains the value of money? Only in this way can we explain any money price as a non-arbitrary phenomenon.

It will be noted that in most discussions of value, the "purchasing power" element in demand is frequently referred to. This element, however, is not an absolute quantity, and cannot be adequately treated as a given quantity of money. It depends, in part, upon the *value* of the good which is used as a medium of exchange, and usually that good is money.

The subject, value of money, is so complex and has called forth such sharp differences of opinion among economists that a survey of the different theories is unusually important.

THE DIFFERENT THEORIES OF THE VALUE OF MONEY

All the various theories of the value of money tend toward one or the other of two main types, the commodity theory or the claims theory.

A *commodity theory* of the value of money is one which holds that money is essentially only a commodity, and that its value is derived from its value as a commodity which is wanted by individuals for its own sake. Thus commodity theorists hold that the value of money is determined by forces of demand and supply in

much the same way that the value of consumer goods is determined by market forces.

Those whose thought may be classified as *claims theories*, sometimes called "nominalism", hold that money is merely a general claim to goods, and is essentially a public-credit instrument. They argue that its value is derived from its general acceptability, or its validity as a claim against the general assets of a nation. Such value is determined by the degree of confidence in its purchasing power which exists in men's minds—its acceptability. (Of course, they hold that its acceptability does not depend upon its utility or scarcity as a means of directly gratifying individual human wants.)

The issue between these two main types of theory is clearly drawn when we raise the question, Whence comes the "purchasing power" of money? The commodity theorists are apt to make such statements as the following: The purchasing power of money comes from the value which it has as a commodity, which in turn reduces to questions of utility and scarcity as seen by individuals. Some say that its purchasing power is that of the substance (bullion) which it contains or represents, without any monetary use. Others may allow for a factor of added demand on account of the use of the substance as money. On the other hand, the claims theorists say that the purchasing power of money, no matter how it is arrived at, is its value, and that it comes from the acceptance of money as a means of exchange which is derived from authority or custom. They assert that the purchasing power of money is independent of any commodity, even going so far as to say that it is independent of individual valuations. They assume that purchasing power can be created or given by the state to any object which can possibly be used as currency.

The difficulties and errors involved in both of these extreme positions begin to become apparent when we follow up these ideas about purchasing power. For example, the commodity theorist, in saying that purchasing power comes from value, and that value is determined by demand and supply with reference to the commodity used, makes it depend upon individual appreciations. Such a theorist gives too little attention to society. The shortcoming of

this position is seen in the fact that an isolated individual, such as Robinson Crusoe, would have no use for money. It is true that the individual must appreciate money; but it is also true that he can do so only in society.

On the other hand, the claims theorist says that the value of money depends upon the state or society, apparently regardless of the desires of individuals. But there could be no state or society without individuals, and exchange occurs only among individuals.

The truth must lie somewhere between these two general positions. It may be true to say that the purchasing power of money is the objective exchange value of money; but we must recognize the limitations imposed by using the words "objective" and "exchange", and we must go on to explain the power to purchase which is assumed. It may be true to say that the value of money depends upon individual appreciation of some commodity, but any individual who is going to use money lives in society, and the attitudes of such individuals towards money are affected by social relationships. Thus our theory must avoid taking "purchasing power" for granted, since in doing so we would beg the question as to the value of money; and we must allow both (1) the importance of individual appreciations and (2) the interrelations among individuals in the social group.

Both commodity and claims theories involve the notion of some sort of absolute value in money: (1) the one as having become "intrinsic" in the particular commodity used as money, (2) the other as being "intrinsic" in the total of all money, thought of as exchanged for all commodities regarded as the "general assets" of the nation. In the latter case, money is assumed to represent a claim by each individual to some share in such assets.

But the synthesis lies in recognizing both that (1) the fitness of the material object used as money is important, and that (2) this importance depends upon the function performed for fulfilling individual desires to exchange goods, an importance which is to be seen in the general voluntary acceptance of it which gives it its general recognition.

Proceeding from the foregoing simplified analysis of the main

types of theory concerning the value of money, we may take up a somewhat more detailed analysis of representative sub-types, remembering that the number of minor variations is great.

A. The Bullion Theory

Beginning at the commodity end, we first note the extreme commodity theory in the shape of metalism, or the *bullion theory*. This is one of the older theories, which holds that the value of money is that of the metal of which it is composed. The value of a coin is held to be the value of its metallic content. Often the argument is that the value derives from the cost of producing the metal, which idea has at least the usual limitations of any cost-of-production theory. In other cases, there is an emphasis on the use of the metal in the arts, as in jewelry, dentistry, and the like. This tends to bring in the demand side of value, but it will be noted that no allowance is made for the monetary demand—the added demand for the bullion occasioned by its use as money. We might also distinguish as one phase of metalism the attempt of certain Austrian thinkers to apply the idea of marginal utility, tracing the value of money to the use of some material for ornamental or other purposes.

One criticism of metalism, or bullionism, as a theory of value of money, has already been made—namely, that it depends too much upon a purely individual appreciation of objects as gratifying wants. There are, however, more special and characteristic objections to the theory. For one thing, it unduly emphasizes a sort of original or inherent value in the metal or bullion as distinguished from money. Again, it gives no consideration—or at least no adequate consideration—to the demand for the monetary use of the metal as a distinct factor in determining its value. Finally, it leads to the consideration of gold or other metallic reserves as having an absolute importance. It tends toward treating reserves as if they were an "end", much as the Mercantilists regard them. In reality, metallic reserves are important only as a means—a means of developing or maintaining confidence in the minds of the users of money, and of limiting the amount of credit currency. (One of

the chief functions of the metallic reserve is to provide some rational and objective limit to notes and deposit currency.)

B. *The Fiat Theory*

The extreme opposite of the bullion theory is that form of the claims theory which may be called *fiatism*—the theory that money gets its claim to have purchasing power as a result of an order from the state. The fiat theory is a form of the claims theory in that the value of money is regarded as being independent of any material which may be used as money. Its positive characteristic is the idea that its value comes from the state, and is determined by government decree, regardless of substance or quantity.

Even in so brief a sketch as this, it should be noted that there may be a "*social use theory*" of the value of money which proceeds on the assumption that there is some metaphysical or natural social order in which money plays a part as representing general purchasing power, and provides a means of cementing together the different classes or orders of society (Romanticist Nationalism). In the last analysis, however, it seems that the authority of the state must be relied upon, so that this theory is essentially a fiat theory.

Also there is what may be called a *custom theory* of the value of money, the idea being that anything is money which is accepted by custom. The value of any existing money is taken for granted as being the result of an evolutionary process. Clearly, however, this does not come to grips with fundamental causes, and unless the thinker goes back to the origin of the custom we get no real explanation. When an attempt is made to find the underlying cause, we may be taken back to the use of some commodity as money for the reason that it is valued as an ornament, or some other reason in the nature of individual choices and preferences. Surely it is of no avail to use such terms as "social utility" or "confidence" in lieu of explanations.

It is well to consider in somewhat greater detail what has been called the fiat theory. The logic of this theory requires that the thinker should hold that any object which can circulate may be made full legal tender, and therefore become money—regardless of

the nature of the substance or its value in other than monetary uses, and regardless of the quantity of it available or in circulation as money. It is most important to observe that the extreme fiat theory rests solely upon government decree, and not upon anything else. Particularly important are the following: (1) the strict fiatist attaches no importance to the choice of a valuable substance for monetary use. (2) He allows for no effect on the value of money that may come from increased monetary demand. (3) He allows for no effects arising from the limitation of the quantity of money. Certainly, we must not confuse fiatism with such minor operations as buying enough silver to raise the market value of that metal, "devaluing" gold coins by reducing their weight, etc.

In criticism of this general theory, we observe first that there is no proof that it has ever worked or ever can work in practice. We may freely admit that there have been cases in which "fiat money" has existed for some time and circulated as currency, notably the German rentenmark and the Austrian gulden. Perhaps it may not be possible to prove conclusively that in such cases a currency has definitely *not* served as money and derived some value from state action. The author's point is that, at the very least, it can be said that in all cases such illustrations fall short of complete proof of fiatism, for one or both of the following reasons: (1) There has been some hope among those who accept such a currency that it will eventually be converted into some valuable objects, such as gold or silver or mortgages—the last in case of the rentenmarks. (2) Or there has been some limitation of the quantity of the currency. Of course, if both these conditions exist, the lack of proof that government fiat is responsible for any value, is still more apparent.

Again, it is to be noted carefully that, while the government can give any *nominal* "value" to the money unit, as by fixing its own buying "price" for gold, silver, or other money substance, or by designating half an ounce, an ounce, or two ounces of silver as a dollar, this is not fixing the real exchange value of money. Government price-fixing is no more a theory of the value of money than it is a theory of the value of commodities! By fiat, the government

may limit issues of paper currency, but it cannot determine what effect a given quantity may have upon the purchasing power. (A great weakness of the fiatist's argument is that it provides no basis for limiting the quantity of the currency—no basis for controlling inflation.) Certainly, it cannot give value to paper. A government may accept its notes in payment of taxes and may make them legal tender for limited purposes; but not all people pay taxes, and it has been found that the relationship between the government and its citizens is such that not all the affairs of the state and business can be run on a legal-tender basis. Again, the government can cut the size, and therefore the value, of a metallic money unit such as the dollar, but it cannot thereby increase the *value* of the metal in question, or the total purchasing power of its currency.

Reduced to the last analysis, schemes of fiat money appear to depend either upon managing the quantity of money or upon confidence in government credit.

C. The "Quantity Theory"

Somewhere between the two extremes of bullionism and fiatism, lie more moderate theories which allow both for individual desires and for the phenomena of society. The first of these to be mentioned may well be the quantity theory.

Perhaps the quantity theory, strictly stated, should not be considered as a theory of the value of money. In reality, it *assumes* the quality of value in money. This sort of assumption, however, has not prevented the price economists from formulating their theories of the market value of commodities, and it will supplement the previous criticisms of "price economics" and of opportunity-cost doctrines, to consider the quantity theory of money as a theory of the value of money. Without referring to the earlier and cruder forms of this theory, we shall take as a type the most commonly known expression of it in the period between 1920 and 1940—namely the formula $P = \frac{MV + M'V'}{T}$ (In this formula, $P =$

⁴ This formula is derived from the so-called equation of exchange, $MV + M'V' = PT$.

average price, M = number of units of money in circulation, M' = average amount of credit used as a medium of exchange, V = velocity of money, V' = velocity of credit, and T = the quantity of goods sold, or the physical volume of trade,—all being averages for a given period of time, presumably a year.)

The following brief statement is quoted from the pamphlet, *How to Understand Money*:⁵

The quantity theorists hold that if we increase the number of currency dollars, *other things remaining equal*, the average of prices must rise in proportion, and vice versa. Accordingly, they think they can manage prices by managing the supply of currency (money and credit).

1. In the first place, they cannot find any evidence to support their claim. We have had ample chance to see that it does not work in practice.

For years we have been loading the banks with excess credit (deposits). We have also experimented with increasing the quantity of money. The result strongly tends to disprove the theory. There has been no proportionate rise in prices.

In fact, such relatively small rise as has occurred [1938] has been largely due to fear as to the quality of our money, and to the change in the size of the gold dollar—not to the number of dollars. It has resulted from reduced confidence in money, shown by some "flight from the dollar".

Another fact is that at the peaks of business cycles, the quantity and velocity of currency are great, but prices fall, and fall before the volume of currency does. In periods of great (currency) inflation, prices rise even faster than currency volume.

2. Perhaps it is as fundamental as any point, to say that the theory ignores the part played by demand in determining value. Mere quantity has no effect except through demand. Unless there be a demand for goods, money does not work; and merely increasing the quantity of currency does not create demand for goods.

Such a demand comes when profit opportunities exist, and labor can be productively employed so as to earn wages. Then money goes to work and demand for goods may put prices up. But until then, quantity of currency does nothing (unless through fear, and that shows that quality counts as much as quantity).

3. A conclusive [evidence of] fallacy is this: the quantity theorists look at two sides of the same thing, and say that one side is the cause of the other! They say that the quantity of currency spent equals the price of goods bought, or that the value of money equals what money buys. This is true, but means nothing. You might as well gravely state that the number of bushels of wheat sold equals the number of bushels bought.

⁵ L. H. Haney, New York, 1935, The Farrar and Rinehart pamphlets, No. 7 (out of print).

What then? These statements throw no light on what determines the value of the dollar, or on the size of the bushel. In fact, if you say that the average of prices is determined by the volume of currency, you are assuming some value for the currency unit, and are begging the question as to what a dollar is worth.

4. The quantity theorists get into all sorts of trouble in assuming that they can change the quantity of currency while keeping other price-determining factors equal. Yet they must make this assumption if they are to get the results they predict.

For example, the *velocity* of currency, or the rapidity with which it circulates, varies with business activity (T) in a way which makes it impossible to predict the effect of increasing the *quantity* of money. And there are several other disturbing interrelations in business which invalidate the theory.

The whole thing is not only bad mathematics, but is a futile attempt to treat economic forces as if they were mathematical quantities.

Especially to be stressed here is the fact that "M", "V", "P", "T", and similar concepts, are not mere numbers. They are not composed of strictly homogeneous units, and they cannot be changed in quantity or be added, with any probability that they will not change in quality. For example, if we increase M' (credit) we may thereby reduce the value of M (money), either by reducing the demand for money or by causing fear concerning its purchasing power. Or if we add M and M', we find that the result is not certain, but depends upon many conditions. For example, M may not go into bank reserves, and even if it does, it may not be used for monetary purposes, as in loans or investments.

Finally, we observe that the general price level cannot be the value of money unless money has value. The so-called quantity theory of money, however, starts by assuming that money has the quality of being valuable. It then attempts to explain mere *variations* in the average of certain selected prices (some commodity price "index"). This very inadequate basis leads to an attempt to control prices—perhaps an unconscious attempt to insure that money shall have some value—by a system of "managed currency" or credit control.⁶ Thus the "quantity theory" of money finally loses all semblance to a theory of value.

⁶ Surely it is significant that those who have been most active and leading in developing quantity-theory analysis have been among the outstanding proponents of currency "management".

GENERAL NATURE OF MONEY AND ITS VALUE

There remains but one other general type of theoretical approach to a solution of the problem of the determination of the value of money. That is the approach already taken in this work to the problem of determining the value of any economic good. This approach recognizes the dualism between subject and object, which finds expression in the "forces" of demand and supply, and regards value as an equilibrium between these forces. It does not take the quality of value for granted, as do the quantity theories. It is not one-sided, as are both the commodity and the claims theories. It recognizes that there are technological aspects of the problem which are important, and which require that we consider both the *functions* performed by money, and the *fitness* of various objects to perform such functions.

Money is any medium of exchange which circulates freely at par,⁷ thus serving as a measure of economic value. The term, currency, will be used to cover all media of exchange, whether they circulate freely at par or not, thus including in addition to money proper, various credit instruments which may supplement money.

The origin of money lies in the phenomenon of exchange, and therefore is closely related to the existence of society. In order to be money, a good which can serve the functions of money must receive general acceptance among the members of some social group. This may take the form of a gradually built up custom, or it may be attended by the exercise of some act of authority by the political organization of the group. It is to be noted that from early times the provision or safe-guarding of money was regarded as a public or quasi-public function. At the same time, however, it is also to be noted that the origin of money does not necessarily require an edict by government or the state. To the extent that the state is necessary to the protection of society, the state enters into the existence of all human values. But if the state does not act,

⁷ This applies particularly to certificates and redeemable notes. The simplest sort of "par" is the value of some standard quantity of a standard material (such as gold). The concept of par, however, may exist in the maintenance of some particular "average price" index.

individual members of society may choose their own institutions and their own money. More than that, if the state acts in a way which is not acceptable to its individual citizens, they may repudiate its action, and it is a matter of history that attempts to enforce a system of bimetallism have broken down because of the action of individuals according to the tendency which is known as Gresham's Law. History is also full of cases in which, when a government attempts extreme currency inflation, its currency is not accepted, and loses value.

It is helpful to an understanding of the value of money to reflect that, from the social point of view, the demand for money arises from a recognition on the part of individuals of the fact that the use of money facilitates exchanges among them, and that without it their economic lives would be limited more narrowly. Then, as the scope and complexity of the economic life of society grows, the nature and complexity of money also grows. In a rudimentary society, or in rudimentary inter-society exchanges, individuals are apt to insist on the use of something tangible, and having an objective value which can be tested by the parties to exchanges. Thus coin, shells, or other material objects are the chief, if not the only, form of money in such cases. Then, as society becomes better organized, we find a tendency to economize in the use of such valuable material objects as were originally used for money, by substituting for them various forms of "certificates," or warehouse receipts. Finally, with growing integration and continuity of governments, the use of government credit develops, and this development may be regarded as an index of the general use of credit in the business life of the group. With a certain degree of stability of institutions, it becomes possible to have a system of currency which is based upon money reserves, the amount of the currency being much in excess of what could be converted all at once into the material objects held in reserve.

Such an idealized sketch of the evolution of monetary systems, however, serves to emphasize the fact that the money unit has always been kept related to some commodity unit, and insofar as the author can see, this must always be the case. Exactly as business

credit in general must be limited by the productive use of capital goods, and depends upon such use, so credit instruments used as currency must be expressed in money terms, and be convertible into some money good which has an objective value. Perhaps the alternative of reverting to barter should be mentioned. The Collectivist scheme of social tickets furnished by the state as "account money", such tickets to be presented as claims to a share in the good produced within the society and pooled in a common warehouse reservoir, is, in the last analysis, virtually a scheme of barter.

THE "VALUE OF MONEY" AND THE "GENERAL PRICE LEVEL"

There are two confusions of thought which we must be especially careful to avoid in approaching the concept of value of money. These are (1) the notion that money has marginal utility and (2) the notion that value of money depends upon its purchasing power.

Money is not wanted for itself in the sense that it can be directly consumed, and therefore it does not have marginal utility in the way that a consumers' good does. It is an indirect good. Certainly, it is an error to say that the marginal utility of money depends upon the marginal utility of the goods for which money will exchange. It takes but a moment's reflection to convince one that such a statement assumes that money will exchange for a definite quantity of goods, which is equivalent to assuming its purchasing power, and therefore its value. For all we know, the subjective value of money may equal its purchasing power, but the problem before us is to explain that purchasing power. Purchasing power depends upon how much of the goods money will buy, and thus assumes that the price has already been determined.⁸

⁸ Von Mises, in his deservedly well-known *Theory of Money and Credit*, clearly seems to fall into error on this point (pp. 97-98). He argues that the objective value of money must exist prior to its subjective value. This difficulty he attempts to meet by supposing that the things used as money must first have value for other purposes, such as ornaments. This may serve historically in some cases. But an indefinite appreciation by individuals of the exchange-ability of money is not what is in question. The question concerns the explanation of definite and particular prices and exchange ratios. How much, and why? *All sorts of goods have objective exchange value without being used or usable as money.* (A part of the explanation of money value must lie in technological fitness.) Mises, in arguing that gold gets value originally as jewelry, does not explain why

But money is wanted as a means, in a way somewhat analogous to that in which machines or other capital goods are wanted. Money serves to perform certain functions which cannot be performed by any and all sorts of objects. It facilitates exchange by providing a medium which is more convenient than barter. It allows us to measure economic values by providing a standard for measurement, and thus allows the existence of the price system. It enables us to transport and store valuable objects with a minimum of loss and trouble, thus facilitating a system of exchanges which reduces the limitation of space and time to a minimum. In order to perform these functions, the objects to be used as money must have certain technological qualities which give them their fitness with reference to the desired ends.

But, while recognizing the importance of the function of money, and the need of fitness in the objects which perform that function, we cannot attempt to explain the value of money in terms of marginal utility.

As to the relation of the value of money to its "purchasing power", we have already noted that it is quite true to say that the value of money is its purchasing power (if freely determined); but that this is a mere truism which gives no explanation of the purchasing power as it appears in the ratio of exchange (value). Here it should be added that so-called "general purchasing power" is only an average of individual exchange ratios, and is in no real sense a value itself. An average of prices is not the value of anything. A total of all prices would have no meaning, and the average can mean nothing except as it is "weighted" for some special purpose.⁹ In no real sense is all money exchanged for all goods. There is no general price index that is valid for all exchanges.¹⁰

it has any particular definite quantity of value as money. Moreover, it is quite possible that once the function of money is learned, and the technological conditions of fitness for money use, individuals may desire and demand objects as money, without having any desire for those objects for any other purpose, such as consumption. Logically, the monetary demand is entirely separable from other demands.

⁹ Or to eliminate the distortions which arise when "relatives" are averaged.

¹⁰ On this general point, see Mises, *Theory of Money and Credit*, Part II, Chap. 2, Sec. 7.

It follows that it is impossible to "fix" the price or purchasing power of money unless it be in the sense of fixing the price or purchasing power of all commodities and services which are exchanged for money. When it is said that the value of money is what it will exchange for, we should recognize that what is being said is that the value of money is the general price level, and that there is in reality no price of money in the sense that there is a price of any other commodity or group of commodities. The so-called value of money, as a general concept, is no more real than is the so-called general level of prices, which is only an average, and at best covers but a few standard commodities.¹¹

It is a fact, however, that one can think of a broad level of prices, when prices are conceived of as being the rates at which various individual commodities and services exchange for money. However imperfectly, these individual rates of exchange can be averaged; and, however "unreal" the average may be, it has *some* meaning. This differentiates money from other goods. *One cannot conceive of a general value of a list of goods apart from the money measure.*

Under certain conditions, moreover, if the average price goes up, we may draw certain conclusions which show the true nature of money, and throw light on its value. These conditions are: (1) no exceptionally large increase in one or a few prices, to explain the average rise; (2) no important change in the quantity of goods for sale (T); (3) no general change in desires. Then we may conclude that *probably* the value of money has declined, and that its decline is responsible for the rise in prices. Even so, we can be sure of this only if the rise in the average price is so rapid that there is (4) no time for unknown changes in men or goods, sufficient to have caused

¹¹ The only apparent exception is one which seems to prove the truth of this thought, namely, what happens when a paper money standard is resorted to and a so-called price of gold is fixed in terms of paper. This is practically what was done in the United States in 1934. It shows that there is no objective standard of value, and proves that gold is not being used as money, but is being treated essentially as just another commodity. Under such circumstances, commodity prices may be measured in two different ways at the same time, and it has been common to find price indexes expressed both in terms of paper dollars and in terms of gold.

a change in the average, and (5) if there is some change in M , V , M' , or V' which could explain the rise.¹²

Thus we arrive at several important suggestions. There is a relation between the desire for a group of goods, which is related to the demand for money and is a factor in the value of money (implied in point 3 above). There is a distinct and logically separable importance in money, which lies in its character as a common denominator—its general exchangeability—its liquidity (implied in point 5 above, and in the fact that we can draw some conclusions from price averages). It is only by the use of money that we are able to average even a few prices, thus attaining some concrete "index" of the quantity of goods to which a given income is equivalent.

DETERMINATION OF THE VALUE OF MONEY

In presenting a theory of the value of money, it is especially necessary to deal with the question, How does money get any value? This is true not only because there is especial danger that the value of money will be taken for granted or attributed to false causes, but also because money may lose its value entirely and has done so in important cases. Let us therefore begin by inquiring into the causation of the value of money.

A. The Quality of Value in Money; Causation

Money gets its quality of being valuable from the sources of all human values, namely, desire and scarcity. If no one desired to use money, it would have no value as such; if it were free, it would have no value. (Incidentally, if, because of being a free good, it had no value, nobody would want to use it as money.) The explanation of the origin of the quality of value in money to be presented here, may be briefly outlined as follows:

¹² It will be noted that the equation of exchange is valuable as an aid in segregating the special element of monetary value proper, and that it enables us to state with greater assurance the elements in such value. But note that changes in M , M' , V , and V' may be qualitative as well as quantitative, and are to be understood only when considered as being interrelated in complicated ways.

Men desire a medium of exchange to facilitate the trading of goods and services among the members of society, thus avoiding the limitations of barter. This desire for a medium of exchange depends chiefly upon (a) the strength of the unsatisfied desires for all exchangeable goods which are considered by those whose use of money is concerned, and (b) by the degree of confidence which these individuals have in the fitness of the contemplated money for performing its functions in facilitating exchange.

While, historically, the desire for a money good might arise out of a preceding desire for the same material good for consumption (e.g., personal ornamentation), the monetary demand is distinct from the consumption demand, and dependent solely upon the fitness of the good for monetary uses. The desire for consumption, therefore, might cease to exist without destroying, or even reducing, the monetary demand. And since the knowledge of money functions has become so general, it is probable that desire for a money good, as such, may originate and persist independently of any other desire or use for the good.

But, in addition to the foregoing elements of desire, the element of scarcity is necessary in order that the quality of value shall emerge and be sustained. The scarcity is relative to the desire, but it is a condition which depends in part upon technological factors affecting the quantity of money available to those who desire to use it.

This general position is arrived at by observing that, like all economic values, the value of money is relative, and is expressed objectively in exchange. Such objective values, however, are based on subjective tendencies or desires of buyers and sellers with relation to the quantity of money which is available. These subjective tendencies, and the quantity available, as they give rise to the quality of value in money, may be analyzed in a little more detail as follows: (1) It is to be noted at once that money is not desired for direct consumption; it is not desired for itself, but only as an instrument. (2) But to desire a thing for use as an instrument, is to desire some fit object—in this case, some object which is fit for use in exchange, either for consumption goods or for the means of producing such goods. (3) We find a definite degree of desire for

money, which is not a mere vague longing for "more money", but a definite intensity of desire for money for use in some particular exchange situation. In short, the immediate occasion for value in money is an appreciation of its "fitness" to function as a medium of exchange by serving as a common denominator and measure of values.

This "fitness value" may arise in connection with exchanges of particular commodities at a given time and place, in which case the money instrument serves merely as a common denominator and measure of the values of the goods exchanged at that time and place. Money may, however, be desired as a medium of exchanges made between different places, in which case it facilitates territorial division of labor, such as finds expression in intersectional and international trade. Thus money serves as a carrier of value, and its function in this respect has been outstanding in the field of foreign trade. Or exchanges may involve the lapse of time, and money may be desired as an instrument for facilitating exchanges in this respect, in which case its immediately important function is to serve as a storer of value, or as a reserve. Both individuals and nations require such reserves, and may attach great importance to monetary instruments as a means of providing them.

But if it thus be understood how the desire for money arises, the next question is, What assures us that money will be scarce enough to have any value? (We must reflect that some things which appear to function as money may be multiplied indefinitely and lose their value entirely, while other things used as money may become so scarce that they could not serve except at such high valuations that exchange would be restricted.) The question may be answered by saying that in the case of all objects which men have used successfully as money, there is a realization on the part of individuals who use them that there are limitations on their acquisition. (1) In the first place, the total quantity of any given medium of exchange which is to retain value as money, must be limited, as is obviously the case, for example, with gold. (2) In the second place, and from the point of view of the immediate attitude of each individual, there is *the difficulty experienced by individuals or groups in getting*

possession of some portion of the total quantity. The simple fact is that each individual has to earn his share of the money. Men are prone to speak of the total quantity of money as if it somehow or other automatically became effective. Those, however, who observe economic life as it is, know that the matter is not so simple, and that the problem of distributing money is the problem of how laborers, capitalists, and other functional groups can produce goods which will enable them to secure money.¹³

The upshot of this brief consideration of the origin of the quality of value in money is that in any economy in which division of labor and exchange exist, there is a desire for some medium to facilitate such exchange; and, since it is unthinkable that any medium of exchange could serve which exists in unlimited quantities, or which would be freely available to individuals, we may take for granted some degree of scarcity in anything which freely functions as money. Under such conditions, money will have *some value*.

B. *The Quantity of Value; the Determination of Value of Money*

The problem of determination, as noted in another chapter, is the problem of explaining why an economic good has any particular quantity of value. This problem cannot be solved except in terms of causation, or with reference to the forces which cause the quality of value. But in order to solve it, it is necessary to go beyond a mere general explanation of the existence of the value, and to take up degrees of desire and scarcity. In short, we again have to deal with problems of demand intensity and supply intensity, this time in relation to money.

1. Demand Intensity

*Desire for Goods.*¹⁴ The first and most obvious element in determining the intensity with which individuals desire money is the intensity of their desire for those goods which can be acquired

¹³ Of course, this does not imply that the producers want the money for itself, but merely that they want money in order that by its means they may procure goods which they do desire.

¹⁴ Cf. above, pp. 163-167.

through the medium of exchange—generally through that medium only. Such goods include all commodities and services which are exchanged with the aid of money. These goods are possessed by one or more individuals who are willing and able to sell them. They are desired by one or more individuals who do not possess them—or not in quantities sufficient to satisfy their desires,—but who do possess money or its equivalent. According to the intensity of their desires for the commodities or services in question, will be the intensity of their desire for the money which they must have in order to effectuate their desires for the other goods.

It is to be noted carefully that there is no implication in the foregoing statement of an “equation of exchange”. There is no assumption of the existence of objective value. Nor is there any hypothesis to the effect that the ratio of exchange between goods and money is determined by the quantity of money. What, then, does enter into the desire for money as affecting the demand-intensity factor in its value?

(a) One important element is found in the *standard of living* of individuals whose attitude towards money is in question. The number and variety of the goods which they desire and which they seek to acquire, have much to do with the importance they attach to money as a means of attaining their ends. In short, variety and intensity of their wants is primary.

(b) A second element in the intensity of demand for money is the “*real income*” of the individuals concerned. This is not their standard of living in the sense of the number and variety of goods desired; it is the number and variety of the goods which are actually attained and enjoyed—their scale of living. One should observe carefully that it is by no means the money income of the individual. Real income is strictly and rigidly to be kept separate in thought from money income, for the sufficient reason that if we are to assume money incomes we will have to assume prices, which is to beg the question as to the value of money.

Several aspects of real income may be distinguished, for the purpose of clarifying the nature and significance of this point: the real income is much dependent upon the productivity of industry, and

in this connection it is to be noted that technological conditions play a not unimportant part in determining the demand for money. A condition of abundance of goods, associated with high real incomes, is one which is likely to lead to a strong demand for money (not necessarily credit). Again, the distribution of the real income is a matter of considerable importance, and it seems reasonable to assume that down to a certain point where the motivation of production would be unfavorably affected, a fairly equal distribution would be conducive to a larger volume of exchanges, which would tend to bring a stronger demand for money, than would otherwise be the case.

Closely associated with the standard of living and the real income, as affecting the demand for money, is the "*margin of consumption*". This margin may be described as the degree of satiety of the individuals of a group, or as the level of their unsatisfied desires. The importance attached by individuals to money will doubtless tend to vary in the same direction as the margin of consumption. This fits in with the common observation that so-called wealthy people, whose level of unsatisfied desires is low, are apt to attach less importance to a dollar than poor people do, and they have a lower margin of consumption.

The foregoing elements in the intensity of demand for money pertain primarily to its function as a medium of exchange and measure of value. In addition, there is the idea of money as a *reserve*. Most men appreciate in varying degrees the uncertainties of life, and a stock of "cash" is accordingly desired as a reserve against contingencies. Moreover, there is often a feeling that "liquidity" is important, and that it is well for the individual to mobilize his purchasing power in a way which will make it available for any one of various uses. Men do not always desire goods—commodities and services—for consumption. They do not always desire them in the present. There are desires to gamble, to speculate, to invest, to save, and at times even to hoard. In order to gratify these desires, the possession of money is important. Whether we think of hoarding as being the act of misers, or as being a phenomenon which attends occasional periods of inflation, it is

abnormal and to be distinguished from the normal maintenance of cash reserves.

Government services have to be paid for through taxation, and we may distinguish as a distinct element in demand the requirements of the taxpayer.

2. Supply Intensity of Money

On the supply side of money, there is found a situation which is not dissimilar to that which obtains in the case of other goods. The chief point to note is that the supply intensity—the force of the tendencies to offer money—depends upon the reactions of various individuals who *produce or hold* money, as these reactions are affected by costs, scarcities, or other matters. In brief outline, the following points may be made:

(1) *Cost of Production.* The first point lies in the direct and indirect effects of what may broadly be called costs upon potential suppliers of money. Such effects may be important in a gold-standard monetary system in which all currency is convertible into gold coin; although they are relatively small when deposit currency and bank notes are used largely. It is not intended to imply that “cost of production”, in the sense of a sum of money paid by some gold miner or some manufacturer of paper money, is to be taken as an absolute item affecting the value of money on the supply side. What is meant is that various costs and expenses of production pertaining to the supply quantity of various kinds of money, affect the current tendencies of producers towards (1) maintaining or adding to the available physical supply, and (2) *putting it into circulation by spending or lending*. Not only is there the cost of producing any metals which are used as coins for circulation or as reserves, but also there are costs of minting and printing. There are wear and tear on coins and notes, and losses. Doubtless some part of the operating costs of banks may be allocable to the maintenance of the currency, notably the clearing systems and credit departments.

(2) *Tendencies of Holders of Money.* Money is supplied by the action of men. Men who have money are the ones who must supply it. This they can do by spending, lending, or investing, all these

terms being used broadly. Unless people who have money also have the desire, and, above all, the will to spend, the "purchasing power" element in the demand for goods will be reduced. This is but another way of saying that the *desire to supply money*, is reduced, and this tends to increase the value of money. Everywhere today, a considerable part of the supply of money which is "put into circulation" operates through the processes of lending or investing; and the responses of financial institutions to conditions affecting the yield and security of loans and investments, are important. Only those who are not familiar with the business world think that money which is put into a bank is withdrawn from circulation, and therefore ceases to play a part on the supply side.

(3) *Alternative Uses.* Any standard money material may have alternative uses. In that event, conditions in an alternative use will affect the value of the standard material, thus affecting men's valuations of money, and tendencies to maintain the quantity. Here comes the always-referred-to demand for gold "in the arts". Gold is in demand for other purposes than money. Temporarily, an ounce of gold in the form of jewelry may exchange for more commodities than an ounce of gold in the form of money. When its valuation as a commodity exceeds that as money, men will tend to withdraw it from monetary uses, thus tending to reduce the quantity of money; and, on the assumption that it is actually used as money, this will tend to increase its value. If, in a country which is on the gold standard, prices rise, gold may be thought of as becoming cheaper in most relations. It will therefore be apt to be used more widely in the arts, thus reflecting an increased supply intensity of money.

This brief analysis of monetary supply intensity should be concluded by noting that one of the main obstacles to a successful fiat currency, or to one "managed" without an objective standard, lies on the supply side. It is the absence of automatic motivation to expand or contract the supply. There might conceivably be a demand for a convenient paper currency; but what about its scarcity? What is there to take the place of the costs and business losses which tend to shut off the supply of a standard metal when its value falls and prices rise? Arbitrary manipulation, and schemes for counter-

acting falling price averages—to say nothing of political pressures to “lighten the burden of debt”—would certainly cause supply intensity and tend toward depreciation of currency. Probably the chief theoretical reason in favor of an objective standard for a monetary system, lies in the importance of a supply which would be governed by economic motivation such as affects the subjective value, production, and scarcity of all producible economic goods which have objective value. The quantities of shoes and textiles, steel and zinc, lumber and flour, all tend to be automatically so adjusted that marginal demand and supply intensities will be equal. “Overproduction” has a definite meaning, and automatic resistance to it arises as cost and expense come to exceed the lowest bids required to clear the market. But what is to limit the fiduciary issues “created” by a political authority which conceives that public debt is money?

3. Quantity of Money Available

In addition to the factors which affect the intensity of demand for money, and the intensity of supply, there is, as in all cases of the value of goods, a third element, namely, the quantity available. In the case of money, the problem in this respect is peculiar, in that what constitutes money is in some question, and there are those who do not regard the physical nature or substance of money as being a matter of great importance.

The foregoing discussion of demand and supply intensities, moreover, is significant only with relation to the quantity of money which is *available*. It therefore becomes essential to confront the question, What is money, regarded as a quantity? There is an especial danger in the case of money of regarding it as a quantity of value, thus ignoring the technological basis of value. Indeed, it is so easy to think of money as somehow or other being value itself, that even trained economists may be misled.

But a moment's consideration shows one that the *quantity* of the object, money, cannot be *value*. Money is an object, the value of which is to be explained and determined. To start by thinking of money as a quantity of value, would beg the whole question.

One must ask, Value of what? And the nature of this "what" is in question. Before a complete theory of the value of money can be stated, it is necessary to know the nature of the thing to which the value is to be attached.

Again, money, regarded as a quantity, cannot consist of mere claims to other things which have value. To assume this, would be to assume the value of money. To assume that money is a mere claim is to assume its validity as a claim. Thus a claim to a \$5 pair of shoes, if it be taken to be valid, must be thought of as assuming that five dollars have the value of one pair of shoes.

Finally, the thing, money, regarded as a material quantity, must be an object which is capable of having objective value. Otherwise it could not serve as a measure of objective value, and money prices would not have the validity which we ascribe to them.

Such being the case, it seems that we must conclude that the problem of the economic value of money must concern some standard money. It must deal primarily with money that is composed of some material which has objective value, although this material may be supplemented to a varying extent by the use of "certificates" that represent it.

In this connection, the chief question which arises is one concerning various forms of fiat money. The position here taken, as indicated in the comment on "claims" in the third preceding paragraph, is that fiat currency affords no basis for economic value. It is controlled by non-economic factors, political, ethical, etc. The quantity of fiat money is not adjusted according to the forces of demand and supply. Its relation to economic goods, as expressed in "prices", depends primarily upon government authority and the coercive power of the state, but is limited by what we may call the credit of the state—government credit.¹⁵ The government may make

¹⁵ If the state can make its citizens accept its paper notes as tickets, and if it can limit the number of tickets and adjust the quantity to changes in the demand and supply conditions affecting goods, it can do business on credit. This, however, would not be a system of fiat currency. It would be a system of monetary socialism or communism, in which the state would be operated as a business unit. Its credit would be limited by its productivity in terms of goods. This is what the policy of a "managed currency", without any basis in a gold standard or some similar standard, tends toward.

fiat currency legal tender, in which case it undertakes to render such services as governments perform, in exchange for its own notes. Or we may think of such currency as constituting a forced loan to the government. Whatever way we regard it, in practice so-called fiat currency is an indication of the degree of solvency of a government, and its effectiveness depends in the last analysis upon the limitation of its quantity, without there necessarily being any economic basis for such a limitation.

The notion that fiat currency constitutes a physical quantity which can be related to demand-and-supply-intensity schedules, and can be a bearer of objective value, is much like the notion that the state gives a yardstick its length or a bushel basket its cubic content.¹⁶ Obviously such is not the case. Then no more is it the case that the state gives any good its value, or that it gives a dollar bill its value. One has but to consider the *many futile attempts that have been made to fix the "price" of money as a means of controlling the "general price level"*.

But it is just as obvious that the state does decide *how much* length should be used as a yard; for, while it cannot create length or make extension, it can choose some object which has a given length to use as a yardstick. Just so, it can decide how much of the objective value that an object may have should be adopted as its monetary unit, say a dollar, by deciding how much of the object should be used. *Vice versa*, it can "devalue" money by reducing the quantity of the standard money material in its standard money unit. But the state cannot create value by fiat, and no government action can explain economic value to the economic scientist.

The upshot of this discussion of the concept of quantity, is that we are here to consider the quantity of money regarded as a base for the determination of objective value, as being the total weight of some physical object or material which is used for monetary purposes, and which is thought of as being divided into standard money units. Theoretically, it makes little difference how much

¹⁶ Of course the state does not create the length or cubic content, but merely adopts certain quantities as standard units. In the case of fiat money, however, the state undertakes to *create* value.

weight there is per money unit, or the number of units into which the total money material is divided.¹⁷ The value per unit tends to vary according to the value of the total quantity of the money material. It also tends to vary with any change in the weight per unit, such as may occur when standard money is "devalued".¹⁸

One factor which should be mentioned in connection with the concept of the quantity of money, is the use of convertible credit currency. Such use doubtless has an important effect upon the relation between the quantity of money and the demand therefor. The existence of any quantity of convertible credit currency, however, is not to be thought of as a part of the total quantity of money, or as being added to the standard money into which it is convertible. Rather it is to be thought of as reducing the demand for standard money, thus having much the same effect as would come from increasing the quantity of standard money *with relation to demand*.

All the foregoing discussion of demand intensity, supply intensity, and quantity, as bearing upon the value of money, may now be summed up in diagrammatic form.

4. Summary Statement of the Determination of the Value of Money

A summary statement may now be presented. Incidentally this will throw much light upon the process through which the various elements in demand and supply work out their joint effects.

In reality, each individual buyer has his own subjective worth of money, determined somewhat as follows: He desires a given good

¹⁷ Of course, important practical consequences result, notably in the effects upon the relation between debtor and creditor. Foreign trade conditions are also profoundly affected. The effect on general confidence in business may have wide-spread reactions. These things react upon V , V' , and T , and doubtless affect the value of the money material itself, thus influencing the average of money prices.

¹⁸ It is to be noted that this statement assumes that the money material is actually used and constitutes the standard for the monetary system. If this be not the case, the so-called standard unit may be varied in either direction without there being any necessary effect upon the value or purchasing power of the money unit. Thus the "devaluation" of the gold dollar in 1934 had little effect, and no proportionate effect, upon the purchasing power of the paper dollar or the general price level in the United States as measured in paper dollars.

and decides to buy it if the seller's offer be reasonable. His tendency to buy, is his tendency to offer money for the given good, and consequently it is the main factor in the *supply intensity of money*. At the same time, his desires for other goods which money may buy, tend to counterbalance his desire for the given good, and this resistance tends to increase as he buys the given good and parts with money. At some point in his buying (trading money for goods), an equilibrium is reached, and this tends to be his "demand price" or bid for the good in terms of money.

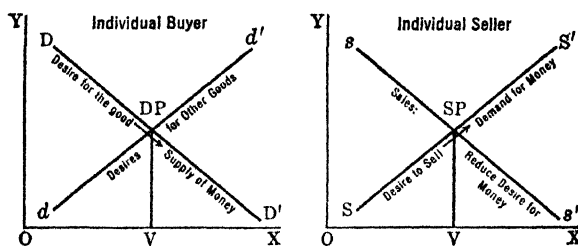


FIG. 19

So it is with individual sellers. Each desires to sell the given good, and this desire is a main factor in his *demand intensity for money*. As his cost increases, or his withholding power decreases, his demand for money is likely to increase. At the same time, as he sells the given good, and receives payment in terms of money, his demand for money tends to be counterbalanced. The equilibrium point tends to be his "supply price", or offer.

The foregoing processes are illustrated in Figure 19. OX represents the scale of both quantities of money and quantities of goods; OY represents the scale of desires, subjective worths and values. DD' is an individual buyer's schedule of desires for a given good; dd' that for other goods. SS' is another individual's desire to sell the good; ss' the result of sales on his desire for money.

Thus we arrive at a buyer's subjective price in terms of money (DP), and a seller's subjective price in terms of money (SP). And, when these various buyers' and sellers' subjective prices for the given good are "arranged" by competition in the order of their

magnitudes, we get, respectively, demand and supply schedules, and an organized market.

Accordingly it is possible to illustrate the forces which enter into the determination of the value of money in a way which has the merit of illustrating the interrelation between the value of money and the value of other goods. This is the purpose of Figure 20.

If we consider the value of money to be expressed as the reciprocal of the value of any good for which money exchanges, we may set up a diagram of demand and supply forces with reference to money, which will be an inverted form of the diagram used to illustrate the composition of forces that determine value of any good. In other words, if we measure on our OY axis a quantity which may be expressed as $\frac{1}{P}$ (P being the price of any good), we may lay off quantities of money on the base line OX, and regard the demand intensity for money as a negatively inclined curve, DD', and the supply intensity of money as a positively inclined curve, SS'.

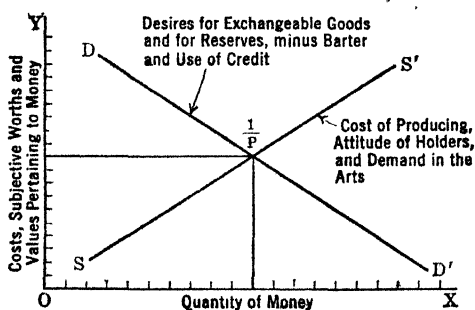


FIG. 20

In the foregoing diagram, the demand curve is taken to represent all the kinds of forces which enter into the demand for money as outlined above on pages 423-6. These may be briefly epitomized as being: the unsatisfied desires for consumer goods which are obtainable through exchange, for producers' goods which are a part of business expenses, and for liquidity or reserves. In short, "business activity," and the profits motive are the basic elements. The effect of these upon the demand for money, however, is reduced by

the use of substitutes, such as convertible credit currency, and in this connection the velocity of credit or the deposit turnover is important. (This fact clearly shows the peculiar and characteristic monetary aspect of the demand.)

The supply curve, SS' , which is carefully to be considered as representing the attitudes and tendencies of holders of money toward supplying it, represents not only (1) the cost of producing standard money, but also (2) business conditions and the costs involved in earning money, which affect the tendencies of spenders, lenders, and investors of money toward supplying it. These conditions on the supply side may be offset or reinforced by (3) the demand for the standard money material in the arts—its alternative uses, if any.

The total quantity of the standard money material, as divided into standard money units, is laid off on the base line OX . The purchasing power of the quantity of the standard money material which is contained in a money unit will tend toward a point $\frac{1}{P}$, where the marginal demand-intensity and the marginal supply-intensity of money are equal. If the money be "devalued", the number of units into which OX may be divided is increased so that we merely have a smaller quantity of the standard money material in each monetary unit.

One shortcoming of the foregoing chart (Figure 20) is the fact that it provides no suitable place to represent changes in the quantity of goods other than money. Neither does it offer any way to illustrate any change in the demand for or supply intensity of money, apart from the particular good. Accordingly, there is presented next a chart designed to illustrate the two aspects of the *joint* determination of (1) the value of money and (2) the value of any commodity other than money, closely interrelated as they are. It will be observed in advance that this makes it necessary to use two scales of quantity, one for the commodity and one for money.

On OO' are measured bids for and offers of a given good in terms of money.

On OX are measured units of the good. On $O'X'$ are measured

units of money. DD' is the demand schedule, representing buyers' subjective prices of goods (bids). Roughly paralleling DD' is the buyers' schedule of subjective worths of money, BM . SS' is the supply schedule, representing sellers' subjective prices (offers) of the same good. The subjective worths of money to the sellers are represented by CM . As more goods and money are exchanged, the quantity of the good increases from O to V ; the intensity of demand for the good, as measured up from OX , falls from D to P ; the subjective worth of money to the buyers, as measured down from $O'X'$, increases from B to P ; the intensity of supply of the good (offers made by potential sellers) increases from S to P , as measured from OX ; the subjective worth of money to sellers, decreases from C to P as measured from $O'X'$. At the same time that the marginal demand and supply prices for the good are equilibrated at PV , the buyers' and sellers' marginal subjective worths of money are equilibrated at PQ .

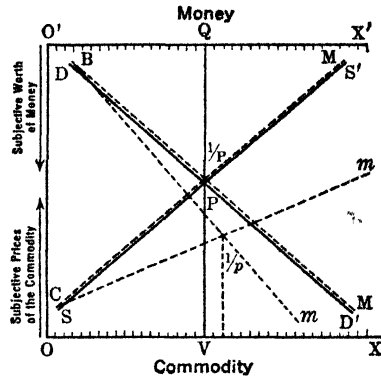


FIG. 21

With the chart thus drawn, we must assume that for each good, the "price" of money is the reciprocal of the money price of the good itself; that is, in terms of each good, the "price" of money is $\frac{1}{P}$. With competitive conditions, this $\frac{1}{P}$ "price" of money may be taken to represent its value, in relation to the particular good. Then there will be as many values of money as there are different prices of goods—as many $\frac{1}{P}$'s as there are P 's.

As illustrated in Figures 19 and 20, an exact inverse correlation between the value of money and the price of the good is assumed, and P and $\frac{1}{P}$ are treated as being just the reciprocals which such symbols usually indicate.

But money has a value which is independent of the value of any *particular* good. Its value is related to its general capacity to serve as a measure of the values of any and all exchangeable economic goods, and derives from its special and unique fitness to serve in that capacity.¹⁹ Thus it is hardly a final treatment of the subject to assume that its value is the reciprocal of some price (or of an average of prices). There are, moreover, such phenomena as deferred payments, the importance of liquidity and reserves, inflation or deflation, and devaluation. These pertain directly to money, and involve its relation to other than current exchanges and prices.

In fact, buyers' and sellers' subjective worths of money, and the schedules of demand and supply as to money, need not always run parallel to, and vary precisely in inverse fashion to, their schedules of desire to buy or sell a given good. In other words, in Figure 20, the areas of the triangles DXO and SXO may differ from the area of YOX; and in Figure 21, the money schedules (BM and CM) may cut across the desire schedules (DD' and SS'). This condition is illustrated by the light dotted lines *Bm* and *Cm*. If, for example, some growing uncertainty causes money, as such, to become more desirable as a reserve, *Bm*, or the importance of money, may rise more sharply than the buyers' desire for or subjective value of the good (DD') declines. Then the line *Bm* moves away from O'X' more rapidly. If, now, sellers also come to attach more importance to money, perhaps desiring to liquidate unsold stocks of their product, we get the monetary supply line, *Cm*, diverging from CM which was parallel to SS'. At the intersection of *Bm* and *Cm*, we have a new "value of money", or $\frac{1}{p}$, which is greater (as measured from O'X') than the original price of the good, PV. As a result, bids and offers for the good in terms of money, are lowered; and the price of the good, P, tends to decline in the direction of $\frac{1}{P}$.

In other words, in this case there is a change in the relative importance of money (representing "other goods") compared with the given good, that is due to a change in the value of money which is

¹⁹ Even if the demand for money be derived from the demand for the good, the *supply* of money would still be an independent variable.

not entirely related to the value of the given good or in proportion thereto.

In conclusion, the object of the chapter has been as follows:

(1) To explain why money, *as such*, has any value, incidentally showing that it must itself have objective value if it is to measure objective values.

(2) To explain how the amount of its value is *determined*; as, on the one hand, money functions in the "demand" for other goods, and, on the other hand, it plays a part in motivating suppliers of those goods.

(3) To demonstrate that the demand for money comes largely from its fitness to serve as a common denominator of all exchange values; but that the value of money is its relative importance in comparison with *particular* goods—not an average of all prices. (This is analogous to the fact that while there is, in a sense, a demand for *food* in general, the values of beefsteak, bread, etc., are the only definite values.)

(4) The value of money depends upon demand and supply forces, the generic or elemental ones being: (a) Demand intensity arising from unsatisfied desires for other goods which are capable of being bought with money, and from the volume of exchanges requiring the use of money; (b) supply intensity arising from cost of producing and acquiring money, and conditions motivating holders of money to spend, lend, or invest.

(5) The value of money is an equilibrium which tends to be related to the value of some good currently exchanged for money ($\frac{1}{p}$). In general, the value of money is always reciprocal to the value of some other good, in much the same way that any commodity value is relative to other goods. But, as shown in Figure 21, the supply of money, and the anticipated demand for it in the future, may cause temporary independent variations.

Chapter IX

DISTRIBUTION; GENERAL NATURE AND FUNCTIONAL RELATION TO ECONOMIC LIFE ¹

The term Distribution has never been used by economists in such a way as to indicate a complete uniformity of understanding or agreement as to its significance. It therefore seems well to give more attention than is usual to a discussion of the meaning of Distribution, and the nature of the phenomena which it is necessary or expedient to consider under that head.

A. Distribution as a Process vs. Distribution as a Condition

Probably the broadest line of cleavage in the treatment of Distribution is that which distinguishes Distribution as a *condition* from Distribution as a *process*. The natural tendency of one who first hears the phrase, "Distribution of wealth", is to think of it as concerning the status of classes or individuals at any given time. A picture comes into one's mind which portrays individuals or social classes in terms of poverty or wealth. One thinks of facts as to equality or inequality in the way in which individuals share the total wealth or the total income of a society. Such a concept of Distribution is essentially descriptive. It is also essentially super-

¹ E. Böhm Bawerk, *Capital and Interest*, reprint (1932).

R. T. Bye, "Recent Developments in Economic Theory" in Tugwell, *Trend of Economics* (1930).

E. Cannan, *A Review of Economic Theory* (1930), X.

J. B. Clark, *Distribution of Wealth* (1899), Ch. 1 and 2.

H. J. Davenport, *Value and Distribution* (1908), XXVI and XXII.

F. S. Deibler, *Principles of Economics*, 2nd ed. (1936), XVII.

L. H. Haney, *History of Economic Thought*, 3rd ed. (1936), 187-190, 290-306, 393-397, 453-468, 618-622, 645-648.

A. Marshall, *Principles of Economics*, 8th ed. (1920), Preface and Bk. VI, Ch. 1-2; Bk. V, Ch. 8.

J. A. Schumpeter, *The Theory of Economic Development* (1934), I.

Suranyi-Unger, *Economics in the Twentieth Century* (1921), 106-116, 189-195, 278-288.

fictional, in that it considers individuals and social classes without relation to function.

This treatment of Distribution generally leads to one or the other of two consequences. Sometimes it leads to the adoption of an inventory idea, according to which the statistician counts the units of "wealth" or money income which are found in the possession of different individuals at the inventory date. This approach necessarily stresses the material manifestations of well-being. Or again, the result may be that the thinker swings to the other extreme and adopts the test of "welfare" in dealing with Distribution. Thus the subject becomes involved in attempts to appraise highly intangible and unmeasurable things. This usually results in the proposal of reforms according to the ideals of the thinker.

Obviously, in either case, the tendency is to stress *personal* Distribution as opposed to *functional* Distribution. The description of the condition of various individuals or groups as to their possession of wealth at a given time, can hardly throw much light upon the relation of that condition to the functioning of the various individuals during a period of time.

But Distribution may be considered as a process. It may be considered as the answer to the question, How is the total wealth, or the total income, of society being distributed? This involves a very different point of view and a different sort of analysis, as compared with the treatment of Distribution as the description of a given condition. It involves, besides description, an analysis of the causes —of the forces which lie back of the processes of Distribution. It requires that one answer the question, Why do the various individuals or groups of individuals get such incomes as they do? What functions do they perform? This, of course, leads to the necessary consideration of Distribution as a process, which involves problems of valuation, or an appraisal of the function performed by the individual recipient of income.

Almost necessarily, too, this point of view leads to a consideration of Distribution as pertaining to income, rather than wealth. As a process, Distribution works out through a continuous flow of gratifications or means of gratification, to the various members of

society. Income is considered as one of the means to the end of want gratification.

Without further discussion, it seems fair to say that a large majority of economists now consider Distribution in the second sense, as a process, and that this is the significant way to regard it from the point of view of a science of economics.

B. The Basis for a Scientific Treatment of Distribution

There are many other deep-seated variations in the discussion of Distribution, and these are so numerous that it seems well to cover them in a systematic way by first noting the possibilities of difference. There seem to be at least seven of these, as follows: the nature of the thing distributed, the area covered, the period of time, the nature of those among whom Distribution occurs, the measurement of the result, the motivation of the process, the reason or justification. These questions will be considered as briefly as may be, in the foregoing order.

1. Content: With What Objects Is Distribution Concerned?

When Distribution is thought of as a process, probably the first question that occurs to one is, What is it that is "distributed"? Does it concern any particular sort of objects? Does it embrace the whole of the social income? From the standpoint of economics, the following generalizations seem to be warranted.

(1) *Distribution Deals with Objects of Economic Importance, or "Means"*. It might be possible to regard Distribution as a process which concerns all the objects of human appreciation. It might, for example, be considered as including the distribution of such matters as culture, health, music, public parks, etc.

It might be possible, moreover, to consider all these objects either in terms of some material embodiment, or in terms of the psychic income which the individual derives therefrom.

Without denying or even minimizing the importance of any of these objects, however, we should note that Distribution as a truly social process must involve values which can be generally recognized, and which can therefore be treated objectively. There is

little if any basis for objectivity—certainly no sure or definite basis—in such “objects” as culture and morals. These, it seems, must involve qualitative values, and pertain to ends rather than means. Moreover, when we try to consider the psychic income or the benefits derived from such “objects”, we find them only within the human person, which location places them in a sort of inviolable position.

For practical purposes, therefore, we limit Distribution to objects which are desired and regarded as important by individuals, and which are valued solely on the basis of their importance as a means of gratifying some kind of desire—any kind. Objects which are desired by an individual are those which present problems to him. They involve adjustments between the individual and his environment. They therefore concern variable degrees of importance, and have quantitative values. As such, these objects, as the economist deals with them, are not considered either as ends, or as means to any particular level or quality of want. They are valued solely on the economic level.

Perhaps one could speak of ethical income or ethical wealth. So it might be with religious or aesthetic income. But how could one measure such income or such wealth? Above all, perhaps, the question arises, how could any two people agree as to what objects are the means to such sorts of income? A little consideration of the peculiar characteristics of the different value levels, as discussed in Chapter IV, will indicate further difficulties in the way of attempting to deal objectively, for example, with religious or aesthetic income. To mix these different values in discussing Distribution, is not only unnecessary, but undesirable. It is undesirable, if for no other reason, because the means must always be considered along with ends. One of the results of mixing ethical, political, and other values with economic value is a failure to give due importance to means, whether that importance be regarded as primary or secondary.²

(2) *Wealth vs. Income.* It is the frequent practice among economists to link the word “wealth” with Distribution, and to discuss

² See above, pages 207ff (For primary and secondary, pp. 170-173.)

the "Distribution of wealth". This makes it necessary to consider what the term, wealth, includes. Does wealth include everything that man wants—intangibles as well as tangibles, services as well as commodities, public goods as well as private? Or is wealth to be limited to the concept of transferable material goods? In this respect, there has been a distinct line of cleavage in economic thought, certain German economists, particularly, leaning toward the broader concept; while the English Classicists almost universally have stuck to the narrower. The author's thought in this respect is as follows: Economic science does not and cannot undertake to cover all aspects of life, or all things that men want. Rather, it centers in the concept of economy, dealing with those desired things which are scarce, and which consequently involve choices that result in making them "important". The expedient course therefore, is to confine the term "wealth", regarded as a primary economic category, to goods which have economic importance (value).

More than that, it is expedient for economics as a science to center attention upon those phenomena which show sufficient uniformity to be regarded as subject to scientific law. Economic science must deal in measurements of some sort, in order that variations in economic quantities may be compared. Thus we deliberately limit the field of wealth to objects which may be valued objectively through exchange, including in addition those objects to which values based on exchange can be imputed.

Being a social science, economics eliminates from consideration mere *claims* to wealth, such as bonds and mortgages.

Moreover, it emphatically rejects all socially destructive items, such as Davenport's "burglar's jimmy".

Finally, some allowance must be made for the existence of such other categories as "public wealth", "national wealth", "business capital", "personal capital", etc. Many things which do not motivate the individual, have importance in an over-individual sense.

Thus, without denying any reality or belittling any important thing, we reach the conclusion that if Distribution were confined to wealth (not income), it would be expedient to limit it to wealth in the sense of goods which have objective economic value.

In part, however, the foregoing line of reasoning is not so vital as it once seemed to be, for the study of Distribution in terms of wealth is not so important. More and more, economists are coming to realize that the great importance of wealth lies in its effect *in conditioning income*—that income is the most important consideration. Let us, therefore, consider some of the reasons for this conclusion.

It will not require much discussion to demonstrate that wealth and income are not the same in nature or importance. We may accept the conclusion of the various economists who have shown with great clarity the difference between wealth, as a fund or stock of goods which exists at a given time and is subject to inventory, and income as a flow or stream of goods during a period of time.

Income, we may say, generally depends upon the *use* of wealth. Even this statement, however, is subject to some qualification, since some income may not be related directly to wealth. Certainly wealth and income are not distributed proportionally among the members of society. We find some individuals who have considerable income, but little wealth, as is the case quite generally among so-called professional men, and almost universally among "laborers". There is no presumption that the income of an individual or a class will be in proportion to the wealth possessed by that individual or class. Nor, *vice versa*, is there any presumption that one's wealth will be in proportion to one's income.

Neither can we assume that wealth and income can be correlated by considering wealth as the capitalized value of money income, and that the two are thus always directly related. For example, it might be supposed that if I receive a \$6000 income, my wealth may therefore be computed as being \$100,000. But how is this computation arrived at? It obviously assumes the existence of a 6% interest rate, or a 16 $\frac{2}{3}$ year life for certain sources of income. Upon what do these assumptions rest? What certainty is there that my income will remain undisturbed throughout the requisite period? Finally, if the income be earned by labor, it will be observed that there are no property rights in labor.

Again, some agent of production, say land, may have value and be wealth; but may not be used at all, or it may not be used with equal effectiveness at different times. In such cases, the income will not be in proportion to the "wealth". Or again, the time factor may enter the situation, on account of the proportions of saving and spending: By saving, I may add to my wealth, but I may at the same time reduce my current income.³ In this connection, we note that consumers' goods differ from producers' goods, in that their relation to income is different. *Consumers' goods* are wealth, just as producers' goods are; but they *give no money income*, and therefore no income that can be capitalized in any ordinary sense. They are different, moreover, in that consumers' goods require a more direct subjective valuation; for to be a consumers' good, it is necessary only that the object be desired and available for consumption by some individual. To be a producers' good, however, the object must function in production, by being a condition prerequisite to the existence either of some consumers' good or some objectively valuable product.⁴

In all this discussion, one fact stands out, namely that income is the *immediately* important thing; and, while its amount is in many cases conditioned by wealth, this is not true in all cases, at least when we define wealth in the only feasible way. Moreover, there appear to be no exceptions to the statement that, to be wealth, objects must not only be salable but also be capable of yielding psychic income.

(3) *Money Income vs. Real Income.* Distribution may be thought of as concerning either exchange values or utilities, since it is possible to think of and define income—or wealth, for that matter—in terms of either. For practical purposes, the difference is similar to that between "money income" and "real income".

Utility, if thought of as the gratification of any want, may, it is

³ Obviously, this is true of psychic income; but my money income may also be affected by a decreased productivity which may result from my lessened consumption of some good.

⁴ From the social point of view, this requires that "costs" be considered, and that the producer good be assumed to yield "products" which are desired more than they are "not desired".

true, be associated with psychic income; while "real income" ordinarily is taken to be the stream of concrete commodities and services which becomes available to an individual or group of individuals during a period of time. It seems probable, however, that the concept of "real income" is significant chiefly because it takes us closer to psychic income than does the concept of money income. In order that one may have a psychic income, one must have a stream of goods to serve as a basis therefor. At least, the major part of most men's psychic income is related to things other than ideal objects. In short, real income is more nearly ultimate than money income. The stream of commodities and services is more directly related to the gratification of desires, upon which desires the existence and degree of utility depend.

We may think of money income as being the means of securing real income; and real income as being the means of securing psychic income.

However this may be, the fact remains that all concepts of income present difficulties, and from the scientist's point of view, the problem of measurement may be decisive. For example, the money income of a given individual during a given period of time is subject to variations which are independent of the real income of the same individual in the same period of time. The great difficulty here lies in the fact that money may conceal the relation between cost and utility—which is why we sometimes use the phrase, "the money veil". One of the best illustrations occurs when one tries to consider "money wages" as a measurement of the laborer's real income. Obviously, the quantity of goods and services which may be enjoyed on the basis of a given money income will vary according to the prevailing price level, the skill and wisdom of the laborer's wife in buying, and many other variables.

The possibility exists that price, particularly when measured in money, may not express the objective values which would result from any competitive process of determination. Government price fixing, inflation, and "imperfect" competition, may be the reasons. Here, then, is the basis of further possible difficulties in judging the true importance of income.

On the other hand, there is the question of the net income. In the case of a laborer, for example, this may mean a balance between psychic income from products or "real wages", and the disutility of labor, upon which the worth-whileness of the laborer's life depends. These may be regarded either from the standpoint of the motivating effect upon the individual, or from the standpoint of his feelings of satisfaction and dissatisfaction. In neither case do we have any assurance that the amount of money in the laborer's weekly pay envelope is in any exact sense the equivalent of the irksomeness of the labor which he performed during the week or of the psychic income received. Certainly, one of the most important and most difficult problems lies in determining the reality and the degree of any direct relation between the money payments made to the various productive agents, and either (a) the utilities derived therefrom, or (b) the disutilities incurred in the functioning of those agents.

Another distinct point is that money income may not all be used for consumption. Varying amounts may be saved, and possibly be invested. These amounts may be lost, may be held intact for a rainy day, or may become the source of additional money incomes.

As to "real income", it is apparent on a moment's thought that it cannot possibly be measured, and that it thus lacks the superficially definite character that money income possesses. If we follow the usual practice and consider it as consisting of material goods and services, we must at once be impressed with the fact that these lack homogeneity; that is, as physical objects, they are incommensurable, for we cannot add haircuts and pounds of beefsteak and books and yards of cloth and songs. The only thing which binds these heterogeneous objects together is their want-satisfying quality, which again reminds us that psychic income is the ultimate thing.

But psychic income depends upon and varies with the desire tendencies, habits, sentiments, and character of the individual subject—his capacity to perceive, respond, and enjoy!

Without further wrestling with the subject, we may decide that *it is most expedient to take money income, to start with, as being*

the only kind of income that can be measured and counted; but to hold fast to the thought that it is significant only as related, through real income, to psychic income. In other words, the economist will use with care the money income data, by making carefully guarded assumptions as to the relation between psychic income and exchange value. He must ever be aware that psychic income, whether regarded as a motivation or as a reward, and psychic outgo, or cost, are not equal to the sums of money with which they are more or less closely related. The theory of value has demonstrated that the desires of buyers have something to do with the determination of the prices the buyers pay; also that the disutility costs of sellers have a bearing upon the prices that sellers charge. It has become apparent that if markets are organized and subject to two-sided competition, the resultant exchange values may be considered as expressing the various disutility costs and desires which motivate the buyers and sellers who are involved in the exchange. Herein lies the great importance of freedom of individual choice. By the same token, the scientific economist must continually remember that herein lies one of the most troublesome abstractions which he must make—one which often is the chief limitation of the practical value of his conclusions.

(4) *Gross Income vs. Net Income.* If we assume the nature of the income and take it to be measured superficially in money, another question awaits us. Are we in our theory of Distribution concerned with the total gross income, or are we concerned only with some concept of net income after allowance for certain deductions? This question comes out very clearly from Marshall's discussion.⁵ Marshall stresses the point that Distribution concerns only those goods which go to make up the national dividend that remains

⁵ *Principles of Economics*, pp. 504-523. Marshall takes the net aggregate of goods and services for the nation as a whole. In arriving at this net aggregate, he makes a deduction for the using up of the raw and semi-finished goods, wear and tear, and waste (whatever that may mean). He then adds the net income on foreign investments. He omits services rendered by individuals to themselves or freely performed for their families, and benefits derived from one's own personal goods or from public property (pp. 523-524). Similarly, F. H. Knight "assumes" that capital goods are or represent perpetual streams of "services", and that the replacement is not income.

over and above "necessities". He argues that the problem of Distribution arises only after a surplus comes into existence. His thought in this respect reminds one somewhat of the Physiocratic doctrine of the *produit net*. Apparently the thought of all those who have adopted the net basis is that the requirements for the subsistence of labor and the replacement of capital may be regarded as "absolute". When they are thus regarded, it may be said that they present no choice, and therefore no problem.*

To the author's way of thinking, this treatment of the matter is not only inexpedient, but also leads to the destruction of economics as a science. It is true that men have to have subsistence and that capital goods have to be replaced—if they are to continue to exist. Nor need the question of "existence" be strictly an absolute one. Surely there are different levels of subsistence and different rates of replacement. Often, important problems arise as to what payments or charges must be made. It is not easy to say what minimum wage is necessary. Not only may one be in doubt as to when a capital instrument has to be replaced, but often there is a question whether the particular form or kind of instrument has to be replaced at all.

The same problems come to a head in the question, How can allowance be made for the changing values of existing instruments of production, when those instruments are assumed to represent a constant stream of services? If the values of products change, the values of instruments of production must change. How then can we assume that they will all be replaced and are perpetual? As a matter of fact, thinkers who attempt to deal with "net interest", and who assume replacement, usually are forced to assume a sort of "stationary state" in which a condition of equilibrium is taken for granted.

After all, one of the deeper underlying problems with which economics, like other social sciences, is concerned is the problem of who or what is to survive. We cannot throw much light on the problem presented by the struggle for survival, if we are to assume an assured existence for those members of society and those instru-

* Cf. F. H. Knight's ideas on production and capital.

ments and agencies of production with which we start the fiscal period!

Another way of putting the same question is to ask, Where is the margin? What is the minimum point at which it pays to utilize labor or land or capital? Marshall himself clearly demonstrated that a marginal-productivity theory of Distribution is no theory at all. But did he not fall into the error of such theory when he assumed, as it were, "a certain" level of subsistence and replacement?

It is true that a differential is a kind of surplus and is relative to a margin. Differentials, however, may correspond to productive efficiency, and express differences therein. They are thus as necessary as the differences in productivity of the different units of productive agencies, and the margins from which they are measured. After all, a margin itself has to be determined, and cannot be taken for granted. Just so, a standard of living has to be earned, and a replacement fund has to be produced.

It thus seems clear that the economist should deal with the total gross income of society, and that it is a part of the problem of Distribution to determine what subsistence and replacement allowances are to be made, just as truly as it is to deal with the differential or other surplus which may arise in excess of such minima.

2. Territory: What Area Is Embraced in the Distribution Process?

Under this head, we are concerned with space, but only as it limits social relations. The chief question which arises pertains to the difference between the nation and society. Thus it was common among the older Classical economists to refer to the "national income" and the "national wealth". And exactly so, we find Marshall continually referring to the "national dividend".

Inevitably, however, the tendency of one who fixes his attention upon a nation is to allow political considerations to enter into his economic analysis. There is a tendency to consider taxation from the point of view of the statesman's business in financing the requirements of government. There is a tendency to deal with the problems of the balance of trade from a similar point of view. It

thus becomes difficult, if not impossible, to keep economic values separate from political values. National distribution is apt to be "Nationalistic"!

As a matter of fact, a nation may lack the unity of a true society, and therefore it may be able to function as a sort of social unit only through coercion within, and through restrictions which keep out "foreign" goods and services. In such a setting, the basis for economic values, or objective values of any sort, is too narrow and uncertain to allow economic science to exist.

It seems, however, that economics can be a social science only in a society; and, since society is not the same thing as a nation, it is important to avoid making Distribution a process which pertains only to a national income or national wealth. Society is any group which is able to function with a certain unity, as was pointed out on pages 78 to 85. While national and political aspects are likely to be one factor, it seems inexpedient, and indeed dangerous to a scientific consideration of economic value, to allow that factor to become predominant, by limiting the concept of the Distribution process to the nation.

This need not lead to any invidious thought to the effect that economics should deal with a "man without a country". We should merely insist that economic motives in men shall be separated from political motives. Accordingly, it is possibly well to avoid the use of the term "political economy", associated as it is with the idea of Mercantilism, and Distribution will be treated as being a social process rather than a national affair.

3. Duration : What Period of Time?

One of the earliest and most persistent questions involved in the discussion of Distribution concerns the tendency to treat it as an annual affair. Should the distributive shares be regarded as certain sums paid in a given year, or should they be regarded as continually changing participations in a continuous flow of income?

The English Classical economists almost invariably spoke of the "annual income" and "annual wealth". Similarly, Alfred Marshall, with his constant reference to the "annual dividend". This treat-

ment appears to have been at least in part the result of the relatively great importance of agriculture in earlier times, and the significance of the crop seasons is always sufficient to suggest the emphasis of the calendar year. Particularly in the case of the Physiocrats, with their emphasis upon the extractive industries and food as the basis of subsistence for the masses, it is easy to understand how the problem of Distribution might become the problem of the annual sharing of the "net product" yielded by the bounty of nature during a given year.

In part, however, the "annual wealth" concept of Distribution has doubtless been a manifestation of a fiscal point of view. When the economist takes the point of view of the statesman or politician, he is apt to think of a nation rather than society, and to be concerned with the budget of the state. This was especially true in earlier times when the royal economy was involved, but the nationalistic economies of the 1930's present ample illustrations.

On the other hand, when the economist goes to the other extreme and takes the entrepreneur point of view, he is apt to arrive at a similar position. He is then apt to think in terms of a business balance sheet and income account. In this case, the income must be tied into the balance sheet, and two results follow: first, the condition at a given time is emphasized, and second, the concept of Distribution as involving wealth becomes predominant.

Since we are to take a social point of view, which is that neither of a statesman nor a business man, and since we are to deal with Distribution as a continuous process, we shall not think of it as an annual affair. We shall not attempt to deal with the problem each single year as though it could be segregated from its predecessor and following periods. We shall consider it as a continuous flow or stream of income and outgo.

Of course, it will be necessary to refer this stream or flow to the period of time within which it occurs, and we may say "per day", "per month", or even "per annum". This, however, will be only in the sense of a *rate*, and one which is subject to fluctuations. It will be only for purposes which pertain to the measurement of a stream of income.

4. Participants: Persons? Classes? Functional Groups?

As already suggested, personal Distribution is unanalytic and provides no workable basis for answering such questions as, What does the individual person do to deserve his income? What relation is there between his income and his costs? Inevitably, it seems, the injection of the personal-distribution point of view gets us into ethical discussions, and leads to speculation about "equality", "needs", and other qualitative and absolute values. The problem of "social justice", so-called, is at bottom a matter of personal Distribution. In these matters, there seems to be no objective test as to what is "right".

Social classes may be regarded in two ways. A class may be a group of persons having common characteristics or status without regard to function, which is distinguished from other groups on some arbitrary basis, such as color, geography, "birth" or the decree of some dictator. The Romanticists of all times have proposed to solve the problem of Distribution—or to get rid of it—by dividing nations into permanent caste-like classes which would be maintained by custom, backed by central authority. The Medieval society is the type for such thinkers; and the doctrine of arbitrarily fixed "just prices" is a logical concomitant.

As opposed to classes in the foregoing sense, we may place functional classes; that is, classes which consist of groups of people having a common interest that centers in their work or the way they get their living. For assured stability, moreover, such functional groups must be the result of free choice, so that dissatisfied members can leave, and outsiders come in. Otherwise, social rigidities give rise to strains and dynamic changes.

Thus the concept of the functional basis for Distribution begins to emerge. The economic function, however, pertains to production, and it therefore concerns the means of production or the several productive agencies. Furthermore, in production, the functional agents must be made to cooperate—they "function" jointly—and there is some grouping of the factors or agencies which is required for efficiency. Consequently, there is always the problem of allocat-

ing the joint product in such a way as to insure the requisite supplies and combinations of the various agents of production.

Accordingly, if detailed discussion be left until later, attention may here be centered upon Distribution *according to services rendered through those productive agencies which are characterized by the functions they perform*, such as labor, enterprise, capital goods and land. It is to be emphasized that these agencies or "factors" function only at the will of man, that laboring, enterprising, saving and investing, and utilizing land, all must be motivated as human activities.

The failure so to regard Distribution has resulted in much confusion of thought.¹ What is the income of a farmer who earns \$1000, of which half goes for living expenses, and half to maintaining or bettering his farm? He "enjoys" \$500 worth of goods as a consumer, and those who think in terms of the direct psychic income of consumers will say that this is his "distributed" income. The other \$500 is said to represent postponed consumption. But the farmer is not, *as such*, a consumer; he is a producer. And the immediate function of Distribution as a process in economic life, is to provide the conditions which uniformly precede production—conditions which may be thought of in various ways as rewarding, compensating, motivating, and maintaining producers. But, in time, there will be no farmer to motivate, if his farm plant is not maintained, replaced, and bettered as economic tendencies require. There will remain no one but a consumer! As a farmer, his money income through Distribution is \$1000.

In short, *Distribution in economic science concerns consumers only as they earn incomes by functioning as producers.*

It may be somewhat reassuring to those who are less abstract in their thought to note that, as a matter of fact, functional classes in society are not without concrete manifestation in the generally recognized social classes. Surely no one has much difficulty in grasping the meaning of a term such as the "labor class", the "landlords", and "business men". Probably the "capitalist" class, although the term is frequently used, is least definite and most misunderstood,

¹ E.g., see discussion by Cannan and Fisher in *Econ. Journal*, Vol. VII.

embracing as it does at least the two functions of providing capital and directing its use in industry.

Having now answered questions concerning the description or physical nature of the distributive process, we confront the problem of measurement and the fundamental issues which center in motivation and in the criteria of distributive justice.

5. Measurement ⁸

The problem of measuring in Distribution has already been touched upon in this chapter in dealing with income as being what is distributed. Moreover, the general problem of measurement as it confronts the social scientist has been discussed in the second chapter of this book. With especial reference to Distribution, however, it remains to consider (1) whether measurements of incomes received for economically productive services are to be made in terms of objective value or otherwise, and (2) how, with the aid of some common denominator, such incomes are to be correlated with the services performed by the recipients. We are here concerned not so much with the conditions or "forces" which determine Distribution, for these are dealt with in discussing value; we are concerned with the problem of knowing what results come from these conditions or forces.

As to measuring incomes in Distribution, the first essential point is that there must be a common denominator which will allow us to coordinate them with production costs and product values. This requires that measurement be in terms of objective value.⁹

The second essential point is that the several factors of production must be measured in such terms that their functioning, costs, and services can be correlated with their shares in Distribution. The work done, the product, and the participation in Distribution must be commensurate if there is to be equilibrium, freedom, science—perhaps even intelligent collectivism. To this end, three possibilities have been considered by economists, as follows:

⁸ Cf. above, pp. 86-106 where the general problem of measuring economic quantities is discussed. See Carver, *Distribution of Wealth*, Chap. III.

⁹ See above, pp. 37f., 94f., 100f.

(1) Sometimes the treatment of Distribution deals with the *total "shares"* of various functional groups; and frequently we discuss the problem of Distribution in such a way as to show that we mean the total amount of wages received by all laborers, the total amount of rent received by all landowners, etc.

(2) Again, we sometimes find that in discussing the distributive shares, we are talking about the *amount per unit* received in a given time, as for example, the wage per laborer per day, or the rent per acre per annum. In this case, we refer not to a total, but to a portion of the total which is received by some participating unit.

(3) Finally, Distribution may refer to the *rate per cent* on some value imputed to a factor. For example, instead of discussing the rent per acre, we may discuss the percentage that the annual rental is of the market value of the land. This is the predominant way of referring to interest, namely as a rate per cent on a capital value. Ordinarily, talk of "interest" means an interest rate.

At the very least, it is desirable that economic discussions should be more clearcut in distinguishing these different ways of measuring Distribution. More than that, however, it will be seen that there are defects and difficulties involved in any one of the three ways of regarding Distribution. It is well, therefore, to consider each one separately.

The idea of distributive "shares" as constituting the total amount earned or received by all those who perform a certain function, is a broadly important way of considering the subject. The obvious difficulty here is that if we start by considering total shares, we are prevented from explaining the amount of such shares. A moment's thought reveals the fact that such total shares are not actually paid as totals. Neither are they received as totals. No one calls together all the laborers of a nation or a society and delivers to them in a body the total payroll of society. The distributive shares are built up from individual cases, and can be explained only by observing the functioning of individual producers and the relation of their individual productions to their individual consumptions. We are reminded here of the unsatisfactory results

obtained by the early Classical economists who attempted to deal with Distribution as a process directly concerned with total shares, and got no further toward reality than the idea of averages. If we are to do any real explaining, we must deal with the differences that exist among individuals and locations, which make it impossible to deal with averages, and at the same time make it necessary to consider differentials and margins. Then we can build up the total share from individual shares, or can explain the total by explaining the individual shares.

If, on the other hand, we consider the amount of income received per individual unit of each productive agent, we run into other difficulties. There seems to be no fatal objection to considering the amount of rent per acre or the amount of wages per man per day or week. What, however, is to be done in the case of machines and other capital goods? Conceivably, one might take a square foot of floor space as representing a physical unit common to such productive agents as buildings. One might even reduce prime movers, such as locomotives, to terms of some unit of tractive power. The idea of "capacity" to render service in connection with some physical operation seems to be the basis for any such attempt. But as one proceeds in this direction, it comes to seem impossible to reduce the various kinds of productive agents to any homogeneous basis in terms of physical units. Physically, the several productive agents or factors are not equal, and cannot be reduced to a series of units. As a matter of fact, although we commonly accept an acre or a *caput* as being a unit the different kinds of services performed by different pieces of land and by different kinds of men, are probably essentially different; but when it comes to all the different kinds of instruments, machines, tools, and appliances which men make, there is not even a superficial homogeneity.

In order to test the proposal to deal with Distribution as a matter of rates or percentages of certain values or capital sums, it is perhaps most effective to ask at once, How could any such procedure be adopted in the case of labor or enterprise? Obviously to attach a market value to a human being—not his services—would be to reduce man to the status of a slave. The fact is, how-

ever, that even in the case of capital goods, buildings, and the like, where the practice of figuring income as a rate per cent on capital value is quite general, the so-called capital value is derived from the income, and begs the question which lies before the scientific economist. We cannot assume the value of the factor or agent without assuming its earnings and the amount thereof.

Those who would deal with interest on capital as an element in the economist's discussion of Distribution, and who at the same time proceed to consider it as a rate per cent on some assumed value of capital, are adopting much the same position that the courts have to take when they are called upon to determine the "fair value" of investment. The courts, however, have usually taken "cost" as the way out of the logical circle in which they find themselves involved. They may take the original cost of the investment or the replacement cost; in either case, however, they merely resort to prices. For particular cases at particular times and for particular purposes, such a procedure may give "satisfactory" results. For the scientist who is seeking the explanation of values and prices, however, the procedure is obviously circular.

Moreover, it could hardly be used in the case of the human agency in production. The only way in which such a use could be attempted would be to consider the man-hour as an index of cost in the sense of irksomeness or pain, which would hardly present a sufficiently definite basis for capitalization!

The upshot of the matter is that none of these bases of measurement is entirely satisfactory. Clearly, distributive shares are not homogeneous when considered as rates per unit of an agent or factor. On the other hand, we cannot assume the *value* of the factor without having assumed a productivity and therefore a distributive share, thus begging our question. We will, therefore, have to consider Distribution with reference to the existing individual units of the several factors; but our consideration must keep intact the relation between the factor units and the total "shares" which arise in society. This presents a problem which will be dealt with in discussing the several shares in succeeding chapters. It is the problem of finding some homogeneous means of measuring units of

efficiency of productive agents, which will be coordinate with the units of their products.

6. Motivation: How Does the Process of Distribution Work?

Two great methods of motivation for the distributive process are possible. (For the purpose at hand, we may disregard intermediate variations.) The first of these methods may be described as automatic, or the method of individualism. The second may be described as controlled, or the method of collectivism.

Under the *automatic* processes of individualism, economic life is coordinated on the basis of self-interest motivation, working through the free exchange of goods and services. The individual is the primary element, and society in a very real sense is limited by the requirement that it exist for the individual.

Under the *controlled* processes of collectivism (or societism, as the author has elsewhere called it), economic life is directed by "social planning" carried on by some central authority, or "the government". Two great types of collectivism have emerged, which in the language of the day (1939) may be called Fascism and Communism, or in the language of earlier thought, Nationalism and Socialism.

Under both these possible systems of Distribution, there is a sort of valuation process. In the automatic process, individual subjective values are made objective by exchange; that is, objective values are the result of a comparison among individual subjective values. In the controlled process, however, the so-called "social values" exist, and are made objective, by the will of some central authority. Thus any objectivity of value there may be is the result of coercion; that is, some leader's subjective value is forced upon others by price-fixing.

According to this latter or collectivist scheme, the degree of control required is necessarily such as to warrant the term, regimentation. One share in Distribution cannot be fixed without fixing all. And all cannot be fixed without fixing prices, or values of products. There is involved the assumption of some common end, which may be described in various phrases, such as "the more

abundant life," or "social justice". In any event, it follows that in large part the means to the common end must be subject to common control, which is apt to involve a partial or complete elimination of private property in the instruments of production.

One of the most important and interesting aspects of Distribution as it would exist under such a system is the fact that Distribution itself would necessarily be separated from the determination of prices or values. That is, the different groups within the controlled economy would be awarded their incomes on the basis of some test of merit or "service" other than their contribution to the supply of economic goods or the value of their services as determined in markets.

It requires little reflection upon the processes of Distribution as they would be carried out in a collectivist state, to indicate that economics has developed as a science under conditions which are very different from those referred to. The author is frankly assuming that economics will continue to evolve as a science that will be helpful to an understanding of life in a society which exists for the sake of its individual members—a society, moreover, whose individual members are sufficiently intelligent to understand that fact. In short, we are here consciously and definitely discussing Value and Distribution as they have existed and may exist, on the assumption of a self-interest coördination of society through exchange, which is the automatic process—the price system.

On the basis of this assumption, we start with individual wants and desires, which we regard as constituting the motivating force, and in that sense the ends of the individuals who compose the society. We proceed to derive from this basis the demand for all the factors or agents of production which are regarded as the means toward the above ends—the means of fulfilling individual motivation, and gratifying desire tendencies. The demand for these agents thus comes from the joint product, which is desired by and sold to consumers.

The process is made effective through the "enterprise" of various individuals who "undertake" to supervise the joint functioning of the several agents of production. To each of the various

agencies of production, there is imputed a share in the joint product, the imputation being based upon a valuation of the indirect contribution made by the agent. Thus the total stream of goods and services is shared among the agents as the means of producing certain physical results which have utility to consumers.

The sharing is on the basis of various claims which the several agents set up. These claims may be based upon contributions made to the joint product, on costs as affecting the supplies or the attitudes and responses of the several agents, or on more or less arbitrary "bargaining power".

Finally, we regard these shares in Distribution as related to the money incomes, which are the "expenses" of the enterprisers, together with such income as the enterprisers themselves require to induce them to function, which will be called their profits.

Distribution as a "Compensation" for Costs; Hedonism. It has appeared that Distribution directly concerns production and producers. Since "costs", when they exist, are necessarily associated with production, the question arises, May we think of the shares in Distribution as being "compensations" for costs incurred by those who supply the factors of production? And if we think of such a compensation as a sort of motivation, are we not assuming a hedonistic psychology?

On preceding pages, cost has been touched upon in a general way, both as participating in the genesis of value and as a motivating force in the determination of value. Here we have to consider it as related to the different conditions affecting the supplies and functioning of the several factors of production, in order to understand the specific limitations affecting each. Each has a different problem of motivation, and each a peculiar "cost".

In fact, Distribution might be treated entirely as a matter of the attitudes and tendencies of producers toward performing their productive services; and, looked at in that way, their negative desires and the resistances they experience, would be important. Everyone has heard men speak of "going to trouble", "making sacrifices", "doing hard work", "putting time in", "running risks", and the like. One often gets the impression that such acts would

not be performed if it were not for rewards received. Does this idea of a distribution of rewards to compensate the agents of production for costs borne, then, imply a hedonistic problem of calculations of pleasures and pains?

To a small extent, at least, the answer is, Yes. Although limited by experience, memory, imagination, and changes in the individual's desire disposition, we do sometimes find a balancing of anticipated agreeable and disagreeable sensations in the minds of mature individual producers.

But it is almost equally common to find producers functioning without any direct or important connection between their activity and any balancing of "costs" and "rewards". Some activity in production is enjoyed for its own sake—say as exercise. Some is the result of mere imitation of others. Some results from a sense of duty, perhaps expressed as a sentiment that "all ought to work". Sometimes a "feeling of loyalty" serves.

Moreover, the attitude of a producing individual who is consciously undergoing "cost", is not necessarily one of definitely balancing the pleasure anticipated from his reward against the disagreeable aspects of his work. He may not consciously appraise his "pay" as a compensation for his pains. Even if there be some general feeling of a relation between the two things, it is often not an exact one, or one that is consistently acted upon. Merely an occasional reflective analysis of the relation between work and pay may intervene between longer periods of "doing one's best" or "holding down the job" or "trying to get by".

The fact is that in a world in which few have all they want, a large part of most men's activities must be directed toward "production" in order that their desire to "live" may be gratified. At one extreme, we find cases in which "necessity" causes indefinitely costly effort. At the other, satiety leads some individuals to seek activity or adventure for its own sake. In between, lies the range of economic activity, characterized by conscious and unconscious equilibria between various utilities and costs.

But, if we cannot find in a hedonistic balancing of pleasures and pains, an explanation either of productive activity or of the in-

comes received by producers (Distribution), we can none the less find such explanation in desires, regarded as motivating "forces", and as has been seen, costs of production are best understood as the resistances to production in the form of negative desires or aversions.¹⁰ Relying upon history, observations, and introspection, we may confidently distinguish and accept as real the following positive desire tendencies, each of which is accompanied by some such negative desire as indicated in italics. These are the fundamental forces affecting work and pay, or Distribution as interrelated with production.

- (1) Desire for rest, associated with *effort* and *fatigue*.
- (2) Desire for variety, associated with *repetition* and *monotony*.
- (3) Desire for consumption goods, associated with *forgoing consumption* and *abstinence*.
- (4) Desire to consume now, associated with *waiting* and *time preference*.
- (5) Desire to be care-free, associated with *business venture* and *non-insurable hazards*.
- (6) Desire for safety, associated with *risk* and *fear*.

The first two items above are ordinarily thought of as pertaining especially to the function of labor, or human activity for the sake of acquiring goods for immediate consumption. Of course, the desire for variety or the new, however, is not limited to laborers, and repetitious effort and the resulting monotony are not confined to any one agent.

The second two items are usually associated with the formation and functioning of capital. The desire to consume, involving a desire for consumption goods, is interfered with by the act of forgoing consumption and the aversion to not-consuming, called abstinence. Also, the desire to consume *now* involves the act of waiting and the sacrifice of time preference, if the savings of the one who forgoes consumption are to be embodied in a capital good.

Finally, the business enterpriser is one who, though he desires freedom from care and worry, also desires the distinction or adventure of "business" sufficiently to lead him to "undertake" the direction of an enterprise, with its attendant hazards and feelings of worry, such as go with a position of "responsibility".

¹⁰ Cf. above, pp. 239f., 257f.

Finally, as indicating that a number of general cost factors may be distinguished which are not peculiarly assignable to any special economic function, we note that most men have a desire for safety, which runs counter to the incurring of risk and the resultant feelings of fear. No doubt, dangerous labor is affected by such factors, as well as dangerous investment and business enterprise. Economics has to deal with different kinds of risk.

It should be emphasized that cost, as the term is here used, is not "pain"—not fear, fatigue, worry, monotony, etc. These things are sensations or emotions. They are not necessarily motor. They may not be connected with any productive activity. In fact, they are results; and, while the individual may desire to avoid them, and act upon that desire, his action will tend to be in proportion to the pain felt, and *not in proportion to the effort or to any product.*

Moreover, cost, as related to production and Distribution in economics, is not a matter of balancing pains against pleasures. It is a matter of opposing desires or motives. One desire is found to be stronger than another, and it predominates in motivating individual action. If the predominant desire be a negative one, in the sense that it tends to thwart a desire tendency *toward* some good, the resultant negative action of the individual with reference to that good is determined by the excess of cost. He does not find it worth while to produce the good.

Cost is not measurable in units of a product, and not always measurable in units of time. The individual's negative desires or aversions, which have been described above as costs, have no necessary relation to the quantity of a good that the individual may produce or seek to acquire. Only in cases in which the essence of the negative desire lies in the animal tendency to prefer like units of a given commodity in the present as against the future, can it be said that cost varies with the number of time units which elapse.

Finally, it cannot be said that cost is effective in influencing value only as it limits the quantity of goods available, or results in scarcity. It is important to emphasize this point, since one of the earliest thinkers who discussed the matter—N. W. Senior—expressed

the opinion that the only way in which cost influences price is through quantity supplied; and many successors have followed him. It will be apparent from the foregoing points, however, that the chief and most direct effect of costs upon values comes through their influence on the reactions of producers as *sellers*. A seller who has undergone a cost tends to take that cost into consideration, not only in producing more goods in the future, but also in offering for sale now the goods he has already produced.¹¹

At this point, some will object that costs have to be sanctioned by utility, and that they do not contribute to value. It is necessary only to remind the reader that utility must cover cost, in order to suggest the reply to this argument. Neither cost nor utility can be taken for granted. Costs may not be worth while unless sanctioned by utility; but *utilities may not be worth anything unless they are costly*. Certainly, the relative importance of two goods may depend immediately upon the difference in their costs; for, with equal positive desires, the net utilities, and the quantities of two different goods that men will produce, will depend upon their "costs"—upon the relative intensity of their negative desires.

7. Justification of the Distributive Process

When it comes to justifying the economic processes of Distribution, we must consider the bases of valuation that are involved, and the tests of "goodness" or expediency.

In this connection, it is well to note first that Distribution results from social processes, being, for example, intimately connected with the division of labor or specialization in production. The answer to the foregoing questions, therefore, must depend upon the nature of society and the relation of the individual thereto. Again the reader is reminded that this matter has been discussed on preceding pages, and accordingly it is assumed that the individual is a primary reality, and that *society exists for the sake of individuals*. This leads to the conclusion that individuals have to be motivated, or induced to function as producers, and that at the

¹¹ This does not mean that he will be able to sell for enough to cover past costs, but that he will try to do so.

same time, as consumers, they have to be induced to buy each other's products. In short, we are assuming that Distribution occurs in a society in which individuals are not completely regimented—one in which individual choices are important.

In the second place, we proceed to assume that it is expedient to consider Distribution primarily with relation to *economic values*, considered separately from other values. This is not to say that Distribution may not well be considered from the standpoint of ethics or politics, or that the economist can ignore the existence of ethical and political values. The point is that, as economists, we stick to the economic level.

On the economic level, the test of the goodness or expediency of any particular distributive arrangement or results, must be found in the relation of the distributive shares to the two ultimate factors in economic value. These are (1) the availability of goods (scarcity), and (2) the desirability of goods (utility), which have elsewhere been referred to as "fitness values" and "interest values". In other words, Distribution will seem economically justified when the shares in Distribution tend to bring a good balance between the production and consumption of goods. But such a balance can be economically "good" only when the costs of production seem worth while in comparison with the utilities of consumption, as viewed by marginal producer-consumers. When cost equals utility at the margin, and equilibrium thus exists in this fundamental sense, we have reason to believe that there is attained the maximum net gratification of those wants which can be satisfied by economic goods. This, then, is the economist's basis for attaining that elusive ideal, the greatest (economic) good of the greatest number.

All this involves a consideration of the effects of Distribution upon production, as well as upon consumption. Its effects on production concern the total quantity of goods which are to be distributed. Its effects on consumption concern the use of the goods after they are distributed, to the end that they may give the most gratification,—a consideration which would take us into a study of the character of wants and the principles of harmony and variety in consumption. It is necessary, however, to pause for but a brief

discussion to indicate in a very general way what seems to be the main point at issue.

In a sense, production comes before Distribution; consumption after. Distribution obviously affects that which is to be distributed, and does so through its effects upon production. Just as obviously, it affects consumption; but the effect of Distribution upon consumption is in the future, and is exercised by affecting that which becomes available for consumption. (Incidentally, it will be noted that we thus accept the conclusion that, in a sense, production comes before consumption.)

The point is often made that a greater equality of Distribution which would make available to the poor larger incomes and, therefore, more ample consumption, would tend to increase the net sum of gratifications or utilities in a society. This point is frequently made in connection with discussions pertaining to the law of diminishing utility and the validity of marginal utility analysis in the theory of value. While it is all too frequent in such discussions to overlook the extent and importance of the differences which exist among men, thus failing to allow for the greater capacity of enjoyment which some individuals have, and for the significance of different qualities of wants, it seems clear that the general idea is correct. The sum of net gratifications in a society in which income is equally distributed, *other things being equal* (1), would probably be greater than it would be in a society in which income is very unequally distributed. .

The chief limitation upon the importance of this point, is that Distribution is more than a means of subsistence, or a source of pleasurable sensations, or a compensation for costs; it is an important factor in motivating activity. In short, Distribution affects production, and through its effects upon production, ultimately reacts upon the power to consume. It is quite possible, for example, that an absolute equality in the Distribution of income would so react upon the production of the society as a whole as to reduce greatly the total income stream. In that event, the sum of net gratifications available to the members of the society might actually be reduced. It may be stated as a general principle that, *in a given*

*society, the Distribution of income which would maximize total consumers' enjoyment from a given quantity of goods, is not necessarily the Distribution which would maximize the total supply of goods available for consumption.*¹²

From one standpoint, the so-called shares of Distribution may be regarded as rewards for those who receive them, and when so regarded, they have something to do with the stimulation and motivation of activity in production. This is true, not only in the more direct relationship between wages and labor productivity; it is also true of the relation between interest and saving. Two men may be equal in the intensity of their desires, but may differ widely in their capacities to produce, and consequently—so it would seem—in their ability to gratify their desires. Or, two instruments, say lathes or tractors, may be equal in their capacities to contribute to the gratification of wants, but may differ in their productive efficiencies. Under such circumstances, how are these different individuals and instruments to be provided for in the process of Distribution? Are their rewards likely to be equal? Should they be equal? In fact, what constitutes equality of Distribution under circumstances in which the distributees are unequal?

Of course, there are questions as to what is truly "productive"; and there are those who feel qualified to advise or dictate to others as to what goods should be produced, and in what quantities. We, however, are here frankly accepting the individual's desires as the basis for our test of productivity, merely ruling out those which, if they were gratified, would obviously tend to destroy the individual himself, or his neighbor, and consequently the society of which he is a member.

Thoughtful readers will appreciate that in all this discussion there lie some of the most important moot problems of today or of any day. For example, if Distribution is to be on the basis of consumption, and we are to proceed in the direction of absolute equality among incomes, the result would be equivalent to giving

¹² It should be borne in mind that, strictly speaking, the science of Economics does not require that economists take any position concerning such "applied" problems. Certainly, Economics makes no case for equality.

"the poor" greater power to determine industrial activity, and to govern the production of society. If, on the other hand, we are to assume that there are no limits to the absolute inequality in Distribution of wealth and income, and particularly if we so order our institutions as to perpetuate differences which may arise fortuitously, we may give to "the wealthy" such power over Distribution that they will be able to determine both production and consumption. Probably the chief way in which such control would work out would be through investments.

It would seem that, as usual, we here have the possibility of two extremes, with equilibrium to be attained only by a synthesis or golden mean. These extremes can best be avoided by seeking to maintain equal *opportunity for producers to make what consumers desire*, and this equality of opportunity is furthered by a scheme of Distribution which motivates production in the social economic sense.¹³

C. *Relation of Distribution to Production and Consumption* ¹⁴

1. Two Extremes: Price Economics and Utility Economics

The foregoing discussion of the motivation of Distribution, and the glimpse at the problem of distributive justice, raise an important question concerning the relation of Distribution to Production and Consumption. Most of what is consumed must be produced; and most of what is produced is for consumption. It is necessary, however, to speak thus guardedly, for the relation between production and consumption is not as direct and simple as some economists appear to think. Free goods, for example, are, in a sense, con-

¹³ Equality of opportunity may be thought of as concerning opportunity to produce or opportunity to consume. The distinction, however, does not seem to be so important in any practical way as might appear at first glance. While wide differences exist among men as to their capacities to enjoy or experience gratification, there is no presumption or evidence that these differences in "consuming power" have any definite relation to differences in producing power. In other words, among those whose power to produce is great, we are as likely to find those whose power to enjoy consumption goods is great, as *vice versa*. It follows that equal opportunity for producers does not run counter to equal opportunity for consumers.

¹⁴ Cf. H. J. Davenport, *Value and Distribution*, Chap. XXVI.

sumed, although they are not produced. Goods which are "naturally" scarce are of considerable importance in consumption, but may require little, if any, production. On the other hand, production may be carried on for the sake of the activity which it involves, without any reference to consumption, and no doubt a considerable quantity of products could be found which are not the result of activity directed toward the gratification of any want for consumption. Again, much "production" goes to replace or add to the capital goods equipment, and does not coincide in time with consumption. Finally, it is easily possible that while total consumption and total production must be similar in quantity over any long period of time, the way in which the products are distributed for consumption may differ widely from the way in which they come from individual producers. In other words, the quantities produced by different individuals may not equal the several quantities consumed by the same individuals.

No serious difficulty appeared in the relation between production and consumption, as dealt with in economic thought, until division of labor had made considerable progress. Then there came into existence, functional classes. Producers made things for exchange, and not for direct consumption. In short, an exchange economy arose. Then came a growing separation between production and consumption, and individuals were given dual personalities, having apparently different interests as producers and consumers. The problem of motivating production and rewarding producers so that products might be of the kind and quantity that consumers desired, became a serious one, not only in theory but sometimes in practice.

Thus there arose a new phase in the theory of economic value, and exchange value gained a new significance. The test of productivity and the direction of production were no longer determined by a direct composition of positive and negative desires, or by comparison of wants and efforts in the minds of self-sufficient individuals or families. It became impossible to rely upon authority or custom to direct production. Thus value, in the shape of objective exchange value, came to be relied upon to determine what

is worth while to produce, and what productive agencies to use.

Adam Smith is significant in the history of economic theory largely for the reason that he sought to solve the problem of correlating production and consumption in an exchange economy by applying the theory of value. According to his "price system", production and consumption and value were to be made strictly coordinate in theory. Distribution became not a distribution of goods or utilities, but a distribution of "wealth." And the criterion of wealth became the possession of exchange value, wealth consisting of "vendible commodities". Logically, therefore, production was defined as limited to the creation of such commodities, thus applying the test of exchange value. Logically, too, consumption should have been so defined; but, perhaps because of the seeming narrowness of such a move, such a definition does not appear to have been considered.

The omission of any great emphasis upon the problem of consumption, however, soon brought in critics. Such economists as Lauderdale, Sismondi, and the Socialists attacked the Smithian concepts of Wealth and Distribution. Later, the welfare economists and the subjectivists also attacked. All these critics stressed the idea of abundance. They attacked cost as a basis for determining value or measuring wealth. Some of them, at least, emphasized non-economic importances, holding that ethical and political values are inseparable from economic considerations.

Most economists have yielded, to some extent, to the tendency to broaden the concept of wealth by introducing something of the significance of welfare. The entering wedge for this modification of Smith's economics has doubtless been the growing tendency to emphasize consumption, and to include it as a distinct part in the economic discipline. It seemed at first to be essential to regard consumption as being the process by which men gratify their wants for all sorts of goods. Then, following the emphasis upon consumption, there was a yielding to the same broadening tendency with reference to production, until now it is almost universal to define production as "utility creation," or words to that effect.

Thus we find that there now exists no coordination in the

thought of most economists with reference to these several branches of economics. Production and consumption are usually defined on the basis of criteria which are quite different from those which determine the nature of Value and Distribution.

Accordingly, there is no assurance in the economic theory which prevails currently that production will be directed or governed according to objective values. It is not strange, therefore, to find at one extreme the Socialists proposing that Distribution be carried on as a social process without regard to individual productivities; while at the other extreme, and probably under the influence of reaction against Socialism, we find a "price economics", which not only refuses to consider ethical values, but undertakes to deal with economic phenomena without any consideration of value as distinguished from price. (In other words, price economics takes prices for granted, and thus refuses to consider them as expressing objective values which are based upon subjective values.)

In order to bring out the full importance of the problem thus suggested, there is presented next in parallel columns a summary tabulation of most of the essential fundamental aspects of the thought of two groups of economists who differ widely in their ideas about the nature of wealth and the part that prices play in governing production and consumption. The essential difference between them, it will be found, lies in the answers that they give to the questions, What is the relation between Value and Production? What part do Value and Distribution play in equalizing Production and Consumption? When the differences between the two groups have been studied, the reader will be in a better position to understand the conclusion accepted in these pages.

It is to be noted in advance that the purpose is to contrast *two extreme* positions. Therefore, the points are boldly stated, as strict logic requires. Probably few individual utility economists or price economists have consciously held all of the positions here assigned to "utility economics" or "price economics". Probably none has *fully* stated such views. (Indeed, it is all too common to find mixed and inconsistent views, to say nothing of unconscious assumptions or postulates.) If regarded as the logically necessary premises and

conclusions pertaining to two *extremes* in economic theory, however, the following points will be found to be substantially accurate.

"UTILITY ECONOMICS"

(*Societists*: Socialists, some Social-Organism Theorists, some Welfare Economists, "Technocrats," etc.)

1. Scope of Economics determined by "*needs*".
2. Assumes the utility of existing goods, and that they therefore have a sort of absolute value ("*socially necessary*") depending upon desires for them.
3. Value known only in wants; equals or is *utility*.
4. General "*welfare*" emphasized; includes non-economic goods; depends upon subjective values of "*leaders*" in authority.
5. Criterion of production is utility, in sense of things "*good for*" men.
6. Ignores technological differences among men.
7. Social service concept, "*production for service*"; technology reduced to "*labor*".
8. Consumption assumed to be in accord with needs or wants, without any definite relation to production.
9. No correlation between distribution and production; production controlled according to total needs.
10. Demand depends upon wants (implemented by "*purchasing power*").

¹³ Cf. the doctrines of J. M. Keynes.

"PRICE ECONOMICS"

(*Individualists*: Physiocrats, some Nationalists, Catallactics, Entrepreneur Economics, Mathematical School)

1. Scope of Economics determined by "*rareté*".
2. Assumes the scarcity of existing economic goods, and that they therefore have a sort of absolute value quality depending upon their quantities.
3. Value known only in exchange; equals or is *price*.
4. Price emphasized; appropriability and transferability necessary.
5. Products are "*services*" (utility assumed) judged by prices.
6. Ignores technological differences among objects.
7. Production taken for granted; no technological problems recognized.
8. Assumes production; consumption to be adjusted by controlling saving (through money rates and price control).¹⁵
9. No correlation between individual or functional distribution-shares and productivities; total prices of products = purchasing power of consumers.
10. Demand depends upon price (is quantity bought at a price).

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|---|--|
| <p>11. No expense-costs; deal only with opportunity costs (utility-determined).</p> <p>12. The individual and his disutility costs are subordinate to social necessity and control.</p> <p>13. No free exchange; any values fixed by authority.</p> <p>14. No money, or none having objective value; therefore, no "price system".</p> <p>15. Economics subordinate to ethics; mixed.</p> <p>16. No automatic equilibrium; therefore a tendency to "social control", "Communism".</p> | <p>11. No disutility costs; deal only with opportunity costs (price-determined); simultaneous equations to equal unknowns.</p> <p>12. The motivation of the individual is either taken for granted (the existence of goods being assumed), or is made dependent upon control by the state.</p> <p>13. Prices of goods are results of exchange; exchange controlled by money rates and managed currency.</p> <p>14. Money emphasized; prices considered as sums of money, and determined by <i>quantity</i> of money; therefore, no value system.</p> <p>15. No ethics considered; economics subordinate to politics.</p> <p>16. No automatic equilibrium; therefore a tendency to "social control", "Fascism".</p> |
|---|--|

It is not to be supposed that many economists have been so consistently one-sided or extreme as one would be if his economic theory embraced all of the 16 points in either of the foregoing columns. The point is that partial *mixtures* of these opposite positions are common, and that this makes clear thinking difficult.

A comparative study of the foregoing tabulations has a number of values, but the one stressed here is that it shows the mixed or divergent conclusions that accompany an incomplete or imperfect concept of value, and a failure to correlate Value and Distribution with production-consumption.

In part, the two groups are extremely different, as in their treatment of the scope of economics, their test of "productivity", and their emphasis of labor. One ignores differences among men; the other ignores differences among goods. One tends to seek "absolute values"; the other, price ratios.

But the outstanding fact is the similarity between the two which

comes from going to *opposite extremes*; that is, extremes which depart in opposite directions from an equilibrium position, or "golden mean", lying somewhere in between. Thus both tend to ignore technological problems by assuming the existence of goods; the one assuming "needs" that give existing goods a sort of absolute value (really utility), the other assuming a "scarcity" that gives goods another sort of absolute value (really utility) and makes each good the price of some other. And we find, in the end, that both fail to provide a basis for coordinating production and consumption in an exchange economy. Accordingly, both rely upon coercion by authority, or social control. This is the result of their refusal to deal with the causation of objective value. The causes of such value are to be found only in (1) the forces that *limit* production and consumption (thus affecting scarcity and needs), and in (2) the forces that *direct* production and consumption (thus determining value). But these forces, neither utility economics nor price economics will use. Both logically must resort to circular reasoning which finds expression in such logical devices as "socially necessary labor time", a perpetual stream of "services", "opportunity cost", or "equations of exchange".

In fact, both "utility economics" and "price economics" are names which involve a contradiction of terms; since "economics" implies economizing, choices, and relative values.

Most important is the possibility of arriving at a complete synthesis by finding the basis for harmony or equilibrium between the divergent positions here revealed.

(1) We find that a mere utility economics, while it avoids a consideration of differences (technological) among men, furnishes no basis for equilibrium or for causal determination. It provides no limits or guidance to human activity. Wants or wishes are given free rein. There is no stopping point for production or consumption; for there are no *objectively* determined values, and no separate *economic* value.

(2) Even if we resort to the concept of marginal utility, we gain but little; for it provides no test of relative importance or objective values. Production and consumption would both be carried to the

point of repletion or satiety. "At the margin", differences among individual desires would be equalized; but the individuals would remain separate and logically isolated. No objective "social value" is possible except by means of the unreal assumption of a "social organism" and "social marginal utility".

(3) When we go to the other extreme and begin by assuming scarcity and the quality of value, as the "price economists" logically must do, we run into similar difficulties. Obviously, if we ignore technological differences among goods, we may more easily assume scarcity, and then go on and assume that some value exists, thus making value "inherent". But then we must admit that the larger the quantity of goods produced, the greater the sum total of value!¹⁶ There is thus no more of a stopping point for production than under the utility economics.

2. The Synthesis: Value Economics

What is required, therefore, is a Value Economics, which will provide an explanation of the relative importance of goods in terms of utility *and* scarcity, with due regard for the facts that individuals have different desires and capacities, but are inter-related by common interests and environmental influences. Thus only, can we deal with production and consumption as coordinate with Value and Distribution, and explain an objective equilibrium between production and consumption which is determined by causal forces.

Such a "value economics" may be approached through a synthesis of utility and quantity limitation, as follows:

VALUE ECONOMICS

- (1) Based upon an equilibrium¹⁷ between desires and scarcity, considered as interrelated realities.
- (2) Sees value as a function of the relation between subject and object

¹⁶ P being above zero, the quantity $P^1Q^1 + P^2Q^2 + P^nQ^n$ has an unlimited maximum.

¹⁷ See pp. 41f, 167. Note that one cannot start with scarcity; since it connotes utility and cannot exist except with reference to utility. Thus the essence of scarcity lies in the explanation of why goods are not abundant—the difference between free goods and scarce goods is the dividing line between economics and mere mathematics.

(man and goods), not to be taken for granted as "intrinsic" or "absolute".

- (3) Value is known in "subjective values", which, through exchange, result in objective values.
- (4) Objective values, reflecting choices by mature human individuals interrelated in society, indicate the way to general welfare insofar as welfare depends upon economic goods; neither authority nor property rights necessary to control distribution.
- (5) The criterion of production, therefore, is objective value, or subjective value that may be objectified without coercion.
- (6) Technological differences recognized both among individuals and among objects, requiring adjustments through value.
- (7) Production for sale may represent production for social service, and tends to do so when mature individuals recognize their interrelation in society.
- (8) Production and consumption are interrelated through exchange and objective exchange value, and tend to vary in the same direction.
- (9) Distribution is the process through which this interrelation between production and consumption is maintained on the basis of objective value.
- (10) "Demand" and "supply" are logically separable and independent "forces", which tend toward an equilibrium that maximizes objective values.
- (11) Costs are important data, and "expense costs" represent "disutility costs", which are fundamental, so-called opportunity costs sometimes serving as a bridge between the two.
- (12) Costs, based on negative desire tendencies, are "forces" which motivate individuals toward production and sale.
- (13) Objective values of producer's and consumer's goods are simultaneously determined by causal forces which can be measured.
- (14) Such values, so determined, are represented by prices, which may be expressed in money having objective value determined by a standard.
- (15) Economics, ethics, and politics are three coordinate aspects of social life; their several values must be kept logically separate, but with due regard for interrelations and interactions.
- (16) An automatic equilibrium tends to result from the interplay of the forces of human desires (positive and negative) and natural scarcities. By regulation, not control, (a) the common interests of individuals and (b) the harmony of economic, ethical, political, and other values, can be achieved in society.

If the reader will now compare the foregoing points, item by item, with the antitheses and meetings of extremes found in the points listed under "utility economics" and "price economics", the

significance of the "golden mean" will be apparent. For example, instead of basing economics upon either utility or *rareté* alone, economists may consider *both* as realities which are interrelated, the significant reality in utility being positive desire regarded as a "force"; while scarcity is a means of expressing the limitations of the physical environment with relation to wants, giving rise to negative desire, or cost.

Thus we are enabled to face realities. Marginal utilities are real, but are individual and subjective. Individuals, however, are similar and interrelated, so that we find that in society what has marginal utility for one usually has it for another. Usually, therefore, the good in question can be sold. It is a "vendible" object! Accordingly, while production must add goods having marginal utility, it may also be considered as being directed by subjective and objective values which determine "what" and "how much". *The test of socially-effective production lies in objective value.* (We may well distinguish "utility production" and "effective production".)

Similarly, consumption always concerns goods that have marginal utility; but in society it is directed by value, subjective and objective.

Thus objective value is the social importance of producers' goods and consumers' goods.

Thus, too, value, production, and wealth are made coordinate and commensurable. They are integral parts of an economic science which considers only goods that are "worth while" according to objective test.

Often this test will be through sale or exchange. This, however, is not necessarily the case; nor do we necessarily assume such institutions as private property. Always the sale *potentiality* must exist (vendibility); but, without actual transfer, appraisals based upon costs and utilities may be made objectively, and the resulting valuations may have scientific validity. It is even possible that by some sort of vote or "poll" a sufficiently objective valuation may be attained. In such attempts at valuation without exchange, however, there lie great difficulties. The appraisers or voters would have to be well informed and have a true social point of view. They would

have to count costs and consider the long run. Otherwise, the imputed values would not be truly economic values.

Thus only can man solve the social economic problem of wealth vs. welfare, or the paradox of plenty. Unless production be considered in terms of value, there can be no logical stopping point or direction in production, and wasteful consumption will be encouraged.¹⁸ If, however, we consider production and consumption as interrelated through Value and Distribution, we find the only way to maximize the total production for a society. Only when we measure in objective value, as determined by equilibrium between competitive demand and supply schedules, do we attain a definite concept and a practicable possibility of a socially desirable balance between utility and cost that expresses the desires of all individuals. This balance tends to coincide with the maximum total of the sales of all goods measured in terms of any one good that can be used as a standard at a given time. But that standard must itself have objective value!

3. The Place of Distribution in Economic Life

It is probable that the answer to most of the difficulties which have arisen concerning the broader problems of Distribution will be found in the following statement: *Distribution lies between production and consumption, and in the determination of value.* For the purpose of demonstrating and illustrating the significance of this statement, the following diagram is presented (Fig. 22).

The gist of the matter is that in the round of economic life, there is a logical sequence which involves equilibrium. First come wants and scarcities, which result in desires, positive and negative. These motivate men, and lead to production. Production, however, involves more or less effort, and the use of indirect producers' goods or instruments. These give production power. As explained in discussing cost, however, these efforts and indirections require action counter to negative desires, and give rise to costs. In connection with these efforts, various material agents of production are formed and utilized by the producer. Incidentally, division

¹⁸ Cf. L. H. Haney, *Economics in a Nutshell*, pp. 7-11, 94-97, 106-109.

of labor arises, which involves payments to specialists, usually in the shape of money. Money income is used by the producers who receive it, for the purpose of buying goods which they consume. Thus money income is translated into the direct basis for real income, or consumer goods. Thus, too, men find their powers as

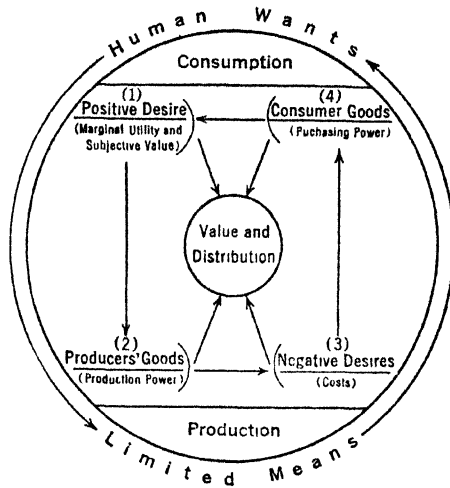


FIG. 22

producers renewed through their enjoyment of real income as consumers.

With products, individuals (as producers) get "purchasing power" which they use to exchange for other products (which they require as consumers). Thus desire is "backed by purchasing power", and becomes "demand". Meanwhile, producers' goods give individuals "production power" which backs up the tendencies to sell arising from negative desires or costs. Thus the force of "supply" is determined. The accompanying diagram illustrates how equilibrium tends to arise; for positive desires—indicated as (1)—tend to motivate production until negative desires (3) counterbalance them; and the value of producers' goods (2), or production power, equals the value of the consumers' goods produced (4), or purchasing power.

To the extent that men save, the complete circularity of the process may be temporarily broken, and surpluses arise; but it is only by continued mistakes and misdirection that the tendency to equilibrium is so counteracted that the economy tends to "run down" or be destroyed.

We ever need to be reminded that producers are consumers, and that consumers are producers. In the long run, production and consumption are so interrelated that they must tend to move in the same direction. Between the two, lies the process of valuation, of which Distribution is a part. It involves the valuation of producers' services, with particular reference to the costs or other limitations upon them. It also involves the valuation of consumers' goods, with particular reference to their capacity to gratify desires. The determination of value requires a valuation of both direct goods and indirect goods. It is in connection with the latter that the problems of Distribution chiefly lie.

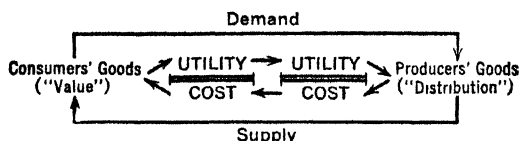
4. Distribution as Valuation

Distribution involves valuation of the services of the agents or factors of production, from the standpoint of their importance as means to the end, desire gratification. In this case, however, the means are indirect, since the agents themselves are not desired except with reference to the products to which they contribute. Ultimately, this process of valuation involves *an adjustment between consumers' and producers' valuations—(1) the consumers' valuations of the final results, or products, and (2) the producers' valuations of the means, or factors of production.* The consumers' valuations are primarily concerned with desires which lead to and condition gratification utilities. (To these, however, there may come to be added more or less of reflective preferences among goods, and some imputations of value to one good as a means of getting another good which has already acquired value.) The producers' valuations are primarily and fundamentally based upon the resistances to production which arise from costs and scarcities. These are primarily the results of negative desires or disutility costs. (But they may become mixed with reflective appraisals of

dissatisfactions, as well as imputations of undesirability or sacrifice.)

In the case of an isolated individual, the producer and consumer of any good are one, and the adjustment goes on among subjective values and worths in a single mind. In society, this adjustment takes place in markets, where prices more or less accurately indicate objective values, and the enterpriser plays a leading part.

Thus we arrive at the following simple epitome of the valuation process, including Distribution, insofar as "production" is involved:



If we let "utility" mean all positive desire factors, and "cost" mean all negative desire factors, the diagram illustrates clearly (1) how desires for consumers' goods become demand for producers' goods, (2) how desires *not* to do what is required to supply these producers' goods, become the "costs" of consumers' goods, and (3) how jointly and simultaneously the values of these two "orders" of goods are determined as equilibria between interrelated "utilities" and "costs".

The process of valuation, as it works out in the field of Distribution, has much the same genetic chain as that which exists in the valuation of direct consumers' goods. For example, we may find therein the same distinction between "interest value" and "fitness value", with the development of valuation levels appropriate to each of these phases.

Thus, beginning with interest value, we find that there must first be a perception of the agent of production, accompanied by a recognition of its reality as one of a group of means of fulfilling desire tendencies. This point is important, since it shows the meaning that lies in the old questions about the technological differences among the several factors of production: Is land a reality

as distinguished from capital? Or is enterprise a reality as distinguished from labor?

Second, the "subject", as a potential producer, must be motivated by the "object", the means of production, which he regards as a means of attaining a particular end. Here the question of "productivity" in terms of utility, is at issue. (Those theorists who emphasize marginal productivity will stress this phase.)

Then, following a realization of the limitations of space and time as affecting the instrument or agent of production, negative desires or "costs" are mixed with some enterpriser's or investor's positive desires or tendencies to buy it. In order to motivate him to acquire or employ this agent, the positive desire for the product must be stronger than the negative desire or "cost" pertaining to the agent. Thus a "subjective worth" is involved. The decision will doubtless hang upon the relative abundance and nearness or other "fitness values" of the agent in question, as well as upon an imputation of productivity to it.

Finally, insofar as interest values are primarily concerned, we come to a judgment that involves comparing or balancing the factors of production, which is a matter of choice. The enterpriser in this connection chooses the general means in the shape of a proportion among the available factors of production, and incidentally makes decisions as to particular agents.

Thus we allow for the marginal productivity, cost, substitution, and the law of proportionality,—all within the development of a valuation process.

As to "fitness values", according to which we consider objects as means, the illustration in the case of Distribution is perfect. The agents or factors of production are, above all, instruments or means; and indirect means, at that. No one is apt to fall into the error of considering them as ends, as long as they are regarded as factors of production. They may be, and generally are, complementary in their use, since they must function jointly in production. The way in which remoteness in time is a factor affecting the fitness of such objects for motivating men or gratifying human desires, is chiefly illustrated by the problem which attends the

formation of capital, where saving is so much the essence of the thing. Without going further, it is apparent that the several agents or factors differ as objects, and their fitness values may vary from time to time or place to place.

Perhaps it is worthy of note that there is involved a great deal of imputation and participation in the valuations with which we are concerned in Distribution. (1) The agents of production being very indirect means to the end of gratifying human desires, their relation to the ultimate end is clearly less immediate than in the case of consumers' goods. The motivation is more indirect and complex. They are not wanted for themselves. Moreover, there are several different agents, and these are usually found functioning jointly, so that it is difficult to say how much of the product pertains to one and how much to the other. Thus, insofar as the agents of production get their value from the product, it must be by means of a large amount of imputation. (2) Again, the several agents of production are not desired by themselves, but only jointly, since they must cooperate to enable man to acquire the direct goods which are the end product. It follows from this fact of joint use, or cooperation, that their values are affected by "participation", in which competition and social relations are involved.

Probably the reality of the existence of "general rates" or "equalized rates" of wages, interest, etc., depends largely upon this condition. On the one hand, competition, and substitutions of one factor for another, tend toward such equalization. On the other hand, monopoly and custom may stand in the way of equalization, as also may political action.

Somewhat crudely, the process of Distribution can be illustrated by diagrams, which, whatever their inadequacy, have the merit of bringing out three important points. (1) The following diagram will illustrate the point that Distribution is primarily a process pertaining to particular industries and products. (2) It will illustrate how essentially interrelated are Distribution and the determination of the values of particular products. (3) It will lead to finding the way to a true concept of total "shares" in the income

VALUE AND DISTRIBUTION

of society, such shares being earned by members of several functional groups. These functional "shares" may then be thought of as combined in a composite total economic income of a society.

The first two points are illustrated by Fig. 23, which shows how the value of any given product, and the values of the services of the factors of production used jointly to produce that product, are synchronously determined.

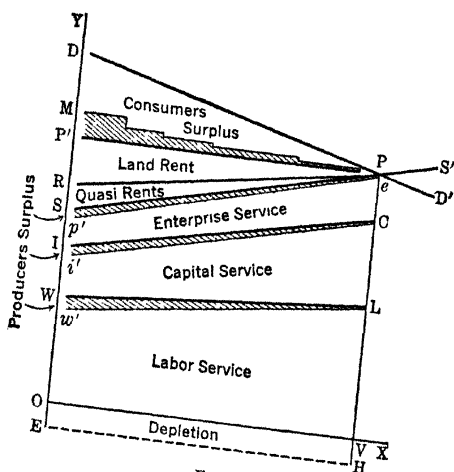


FIG. 23

Let OX be the scale upon which are measured the physical quantities of any good. OV represents the number of product units actually produced and available for sale at a given time. (From time to time, this quantity will vary—as will its value, as we shall see—which fact will affect the incomes received by the producers, or their Distributive "shares".)

We are considering only those goods which are produced and sold for direct or indirect consumption—which embrace the great bulk of all consumer and producer goods which enter into the problem of Distribution in a money and exchange economy. Thus we are not concerned here with problems of saving or borrowing,

or with production for the direct and final consumption by the producer himself.

Each unit of this good is the result of, and in that sense contains, units of "services" rendered by labor, capital, enterprise, and land. More precisely, they represent different amounts of the following: (1) form and location, resulting from the technological "efficiency" of land, labor, capital, and enterprise; (2) disutility costs of labor, capital, and enterprise; and (3) marginal utility to consumers.

DD' represents the different demand intensities of consumer-buyers of the good.

SS' represents the different supply resistances of producer-sellers.

V is the margin of production (and of consumption) of the given good.

PV represents the equilibrium between demand and supply intensities (largely desires for consumption, and "costs" of production). It may be thought of either as the marginal demand intensity at the margin of consumption, or as the marginal supply intensity at the margin of production.

VL is the marginal supply price of the quantity of labor-service in the marginal product unit.

LC is the marginal supply price of the capital-service in the marginal product unit.

Ce is the marginal supply price of the enterprise-service in the marginal product unit.

As the value of PV is determined, the values of VL, LC, and Ce are simultaneously determined. Then OVPP' becomes the sum of all supply intensities (including costs) and producer differentials; and, at the same time, the sum of all demand intensities (including desires for the good), minus consumers' surplus.

At the same time, too, the value of the units of labor power in the marginal unit of product (VL) may be applied to all labor units in the total quantity of the good, OV, thus giving the value of the total labor service in the industry, OVLW, which tends to become the total wages. OW is less than VL, and the line WL slants upward, because VL is the value of such a quantity of labor as is in

the *marginal* unit of the product, and that is a greater quantity than is required for other product units.¹⁹

A portion of "producers' surplus", WLw' , goes to those laborers who for various reasons (such as superior efficiency) would be willing²⁰ and able to work for less wages. These may get no higher wage rates than others, but they experience less disutility in earning what they get.

Similarly, the values of the capital service (LC) and enterprise service (Ce) in the marginal unit of product, multiplied by the number of product units, give us, respectively, total interest, $WLCl$, and total profits, $ICeS$. In each case, an element of "producer's surplus" (ICi' and Sep') is probable, on account of different capacities and attitudes of individual capital and enterprise suppliers.

The total force of supply (the sum of costs and other supply intensities) is the area OVPS, composed of labor cost, capital cost (abstinence and waiting), enterprise cost, and other supply motives. Since some material agencies of production, land, and capital goods are more efficient than others and yield a large quantity of product when combined with a given quantity of human energy, we have the area SPP' as land rent and quasi-rents, the latter being temporary differentials of all sorts, notably those on capital goods. These differentials find concrete expression in different earnings by different units of the factors of production.

¹⁹ It is easy to conceive of SS' as a series of sellers' offers arranged in the order of their magnitude. But the units of product nearest to O, which might be offered at the lowest supply prices (near the point, S) may be the result of *proportions* of labor service, capital service, and enterprise service which differ considerably from the proportions used in making the product units nearest to the point, V. The low-cost producer, for example, may get his superior efficiency by employing relatively little labor and much machinery. Accordingly, we are not warranted in assuming with any certainty or definiteness that the shares of labor, capital, and enterprise can be represented by lines parallel to SP. We cannot assume that WL and IC are straight or regular lines. The areas, $OVLW$ and $WLCl$, are definite; but the shapes of these areas are not. As stated below (pp. 491f., 533f., 543f., 577-8, 594, 602-4, 618, 701-3), however, there is some tendency to equalize these differences, and it is a matter of common observation that the efficient enterpriser is apt to have the efficient labor, land, and equipment.

²⁰ Would be "willing" if they did not know that others were demanding more!

Since the total force of demand (the sum of desires and other demand intensities) is OVPD, there is a buyer-consumers' surplus, which is DPP'. (This, in the last analysis, is psychic income.)

If there be any monopoly or incomplete competition, part of the consumers' surplus may be taken by monopoly prices or the payment of prices higher than equilibrium, as indicated by the irregular line beginning at M. The area RPP' is land rent, since it represents the value of product units (attributable to land) in excess of costs. As shown in the diagram, RPP' results from the fact that there is less labor, capital, and enterprise in each product unit as we go back from V toward O; or, in other words, the line SP rises from S to P. At V, we find the margin of land use, and there is no land rent in PV.

The exhaustion of limited natural resources is a sort of social cost which is indicated by the area between OV and the dotted line, EH, below it, labeled "depletion".

In short, we may somewhat daringly think of the area EHPD as a cross-section of the stream of gross economic income from the particular good in a society. The area EHPS represents costs and exhaustion of limited natural resources, due allowance being made for other motives affecting producer-sellers and for elements of producers' surplus.

To this point, the diagram has been used to illustrate costs, utilities, values, and physical quantities. No prices or price goods (money) have been introduced. While such a procedure would complicate the picture, it might be possible to consider the Distribution of the goods as being effected through the use of money as a medium of exchange. Then the demand curve DD' and the supply curve SS' would be measured in money. Then, too, the area OVPP' might be thought of as the result of multiplying the total units of the good by the money price per unit. This would make it necessary to allow for conditions affecting the value of the "price good" (money).

This bare mention of "the money veil" reminds us how true it is that, aside from questions of "reserves", money is normally de-

sired only as a tool to facilitate exchanges. It suggests the futility, practical and theoretical, of considering social income in terms of money without at the same time assuming prices, the price level, and the purchasing power of money.

The foregoing discussion of the "shares" in Distribution, as illustrated by Fig. 23, concerns any given product, and, to that extent, the "industry" or trade which produces it. But there are thousands of such products and industries. What of them? What of the total for society?

It is barely conceivable that we might regard all industries as fused into one, and all "products" regarded as homogeneous in terms of utility. In short, we might try to consider the foregoing diagram as a sort of cross section of all industry, with the total of all different products arranged from O to V, in the order of their "importance". We would have to think of DD' and SS' as being the desires and costs of all individuals with reference to all sorts of goods. Such a concept, however, is too difficult for so simple a diagram. For example, if the "product units" are taken to be physical goods, they cannot be standardized sufficiently to be measured on the same scale. If they be taken to be equal quantities of marginal utility, we assume that subjective values have been determined, that technological problems have been solved (or do not exist), and that disutility-costs are in proportion to marginal utilities. Or if it be assumed that the units which are measured in the axis, OX, are equal quantities of "cost", the difficulties are the same, only *vice versa*.

It therefore seems necessary to resort to a process of summing up the thousands of different OV's, PV's, DD's and SS's found in a society—the different portions of wage, interest, profit, and rent incomes as found in different industries where they center in the values of different products. Accordingly, we put together all the values of labor-service units found in all industries, to get the grand total for economic wages. If there are a thousand different products, then there are a thousand areas such as OVLW to combine in the total "wage share". Similarly, we may combine the interest, profits, and land-rent "shares".

The result may be illustrated as follows:

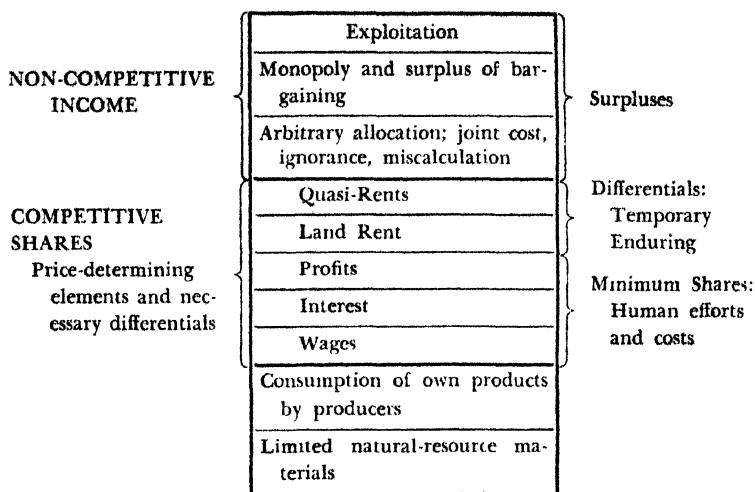


FIG. 24

The area of the large rectangle is taken to represent the total produced income of a society in a given period of time. (New saving and borrowing are not allowed for.) The chief significance of this area, however, is that it is sufficiently large to enable us to consider it as embracing all *kinds* of economic income.

The science of economics, and that aspect of it known as Distribution theory, deal with the area bounded by heavy lines, and bracketed opposite the heading, "COMPETITIVE SHARES; Price-determining elements and necessary differentials". These embrace competitive Wages, Interest, and Profits, together with enduring Land-Rent differentials and temporary Quasi Rents on items of plant and equipment. As noted at the right, Wages, Interest, and Profits pertain directly to human efforts in production, which have to be motivated by Distributive rewards and compensations. Thus they are "costs", and set minima for values of services or shares.

Above this scientific objective economic area, lies another area which embraces such incomes as are not directly related to competitive values, and either are subjective or are not in accord with

the choices of a social individual. Here we have various kinds of "surplus" which are not subject to Distribution according to free choice and equal opportunity.

Exploitation (predatory income) and monopoly are two common sources. "Surplus of bargaining" has been mentioned along with monopoly, but elements of this may be found elsewhere, as in exploitation.

Arbitrarily allocated portions of income are connected with "imperfect" or incomplete competition. "Joint expenses", for example, have to be arbitrarily assigned. Ignorance of economic conditions, and miscalculation of economic forces, often result in values and incomes which do not correspond to a competitive equilibrium of demand and supply.

Finally, we may find cases in which a producer functions directly for his own consumption ("production for use"). Here no objective values govern, and each case is, to some extent, a little Distributive world of its own.

The purpose here is merely to sketch the outlines of the scheme of Distribution, later filling in the details of the part with which scientific economics deals. Perhaps, therefore, we may leave the matter here, with two further explanations.

First, it is not necessary that the values of the factor-service units be the same in all industries. In other words, it is not necessary to assume that wage rates, interest rates, and profit rates are equalized throughout society. Thus, if we assume Fig. 23 to represent the shoe industry, we may add the OVLW area (wages) for this industry to the analogous area in some other particular industry, to get the total wage "share" for the two. This we may do whether the wage rates, or the value of the labor-power in a unit of product (VL), be equal in the two industries, or not. As a matter of fact, economists have long recognized that barriers to competition and mobility exist which may allow considerable and persistent differences among factor-service values in different industries or markets. This phenomenon will receive some discussion below under the head of non-competitive labor groups.

It is unquestioned and unquestionable, however, that under the

influence of the law of economic motivation, competition, and a social point of view, there is a *tendency* for wages, interest, and profits, as rates, to be equalized among the various industries, in the sense of a tendency for the values of the factor-services to correspond to the values of their respective products. This tendency works somewhat as follows:

The value of each product tends to equilibrate bids and offers in its market, and, to that extent, the positive and negative desires of its consumers and producers. The margins of consumption and production at PV tend to be such that a given activity (or a given sum of money representing a given activity) will bring similar results in the shape of product values. If there be great disequilibrium among industries, so that productive effort (activity) gets relatively little result in one, there will be a tendency to motivate some transfer of such effort to other industries. Thus PV, or the value of the marginal unit of any product, *tends* to become equal in all industries; which means that the quantities of all goods which one unit of a standard of value will buy, tend to have equal desire-gratifying or motivating power.

And by the same token, the several elements in PV as shown in Fig. 23—the values of marginal units of the “services” of labor (VL), capital (LC), and enterprise (Ce)—tend toward a degree of equality, or similarity among the different industries, due allowance being made for technological differences, and for ignorance of conditions and immobility. It must not be supposed, however, that this means even a “tendency” toward absolute equalization of wage, interest, and profit “rates”. Even if the margins of consumption and production were equalized, it would still remain true that technological conditions in the different industries and factors of production require different “rates” per labor-hour, per dollar-of-invested-capital, or per unit of enterprise. Some products require little labor, and others much. Some industries are highly risky and uncertain in every sense, and others are not. Thus in two industries in which the value of the product, PV, is equal, the value of labor-in-product, VL, might be 0.3 of PV in one, and 0.9 of PV in the other. In other words, the value of labor activity or

service involved in one product would be three times that involved in another. But this might be due entirely to the large *quantity* of labor *energy* required because the product had to be made "by hand". The *value* of a *unit of labor-service*, or labor-in-product, might be equal.

Second, elements of producer's surplus exist in each industry, as shown in Fig. 23 (e.g., WLw'). These are differentials related to differences in human capacities to produce. These are, as it were, scattered throughout the areas labeled wages, interest, and profits in Fig. 24.

In concluding this analysis of the Distribution process as a whole, we observe that the total income available for "sharing" among the functional groups of individuals who compose a society, is limited by production. What is distributed currently cannot long exceed what is produced currently. Consequently, Distribution cannot be considered apart from Production, and its effects thereon.

In the determination of the "shares", much must depend upon the relative abundance of the several factors of production, allowing both for the quantities or numbers of the material agents, and for their technical efficiencies.

Thus we may say that the *maximum* share of any factor or functional group is limited by the total production; and is the total production, minus certain minima in the shape of quantities of goods required to maintain such other factors or functional groups as are essential to the existence of that total product, and to induce them to function.

And we may also say that there are *minimum* shares for each factor, which, under any given set of conditions, must be received to maintain and motivate the several factor services. These necessary minima are closely related to "disutility costs", or negative desires.

Just for example, labor might conceivably get the total production of a society as "wages". But if tools and enterprise have to play any part, some minimum deductions from labor's share must be made in the way of interest and profits, in order to provide

subsistence and replacement and to motivate the necessary activity of savers, investors, and enterprisers.

The difference between the total income in the society and the total of the minimum shares required to motivate any given production, consists of differentials²¹ and other surpluses, as shown in Fig. 24. And if there be any monopoly, exploitation, or arbitrary allocation of income which favors one factor or another, it is clear that the maxima available for some factors are reduced thereby. These "surpluses" may be income taken by any one of the factors from others, thus raising questions of ethics. They do not reduce the total income, however, except as they may affect the motivation of production.

D. *Definition of Distribution*

Thus, after much exploration, a final definition of economic Distribution is attained. *Distribution is the continuous social process of determining the objective economic value of the technological services of the several factors of production, as measured by the purchasing power of the gross money incomes which those who provide the several factors tend to receive under competition.*²²

A little examination of the foregoing definition reveals that there are implicit in it all of the definitions and conclusions which have been reached in this chapter. Thus a glance shows one that it is a process rather than a condition, and that it is both a social and a continuous process.

It concerns only things of economic importance, and thus involves objective values. It concerns these things as they are expressed in income rather than in a fund of wealth.

This income, however, is to be taken as the gross income, for it will not be assumed that any particular object has to be replaced. We measure it in money, but only with regard to what money will

²¹ The differentials necessarily exist, but are not necessary to motivation.

²² If there were no private property or free exchange, but some basis for objective values were sought, Distribution would have to be measured in some other way. It might be limited to some concept of net income over and above a conservation-subsistence-replacement fund which the state might "undertake" to maintain.

buy, so that we make allowance for prices, and keep in mind real income as the ultimate.

A functional point of view is specified, and in order to understand the functioning of agents of production, we must consider their technological position. This we do, however, not to the extent of begging the question of their value, and not by assuming that some source of supply exists, from which they flow without cost. We recognize the technological aspect as only one aspect of phenomena, to which the relative degrees of importance, or human motivation, must be added in order to bring them within the field of economic analysis.

The whole definition stresses the idea of Distribution as an automatic process of adjusting production and consumption through exchange, not by authority, but by virtue of the desires of individuals to make the best adjustment between themselves and their environment.

Throughout, we measure economic phenomena, including those of Distribution, in terms of objective exchange value. This we do because *such value supplies the only common denominator for all the elements involved in the problem. There is no other manifestation of human values which will embrace both subjective and objective aspects of social life, or which will synthesize costs and utilities.* Objective values arise out of subjective values, and synthesize the individual and the group. They represent an equilibrium between positive desires and negative desires, desires and aversions, utilities and disutilities.

E. *Classification of Leading Theories of Distribution* ²³

1. Annual-Product Theories

The general characteristic of the group of theories of Distribution which may be called "annual-product theories" is that they deal with the total annual product of the nation in the form of goods, and they begin by taking this product for granted. They start with the total product of the past year, which is *assumed* to

²³ See Böhm Bawerk, *Capital and Interest*, pp. 78-79. and last chapter.

have come into existence. This is, as it were, chopped off, and separated from the products of other years. Thus it is not necessarily related to current production—or to current consumption, either—except on the assumption that current production will be the same as that of the preceding year, and that current consumption must be limited to the production of the preceding year—a sort of stationary state.

In this group of theories, the prices of the products are regarded as determined separately from the process of Distribution. Thus the problem of valuing the services of the factors of production, if it be considered at all, is kept separate from the problem of valuing the goods produced. Values, too, are usually dealt with only as “market prices”, and are thought of as being determined by a process of higgling called “demand and supply”. In short, the quality of value is practically taken for granted.

Thus Distribution is thought of as essentially a circulation of physical goods and services. This is described in a sort of descriptive flow sheet which traces the course taken by goods produced in a preceding year on their way to consumers in the current year. The problem is to make physical production equal physical consumption.

Those who have held such theories have dealt with averages and per-capita conditions. There is little basis in these theories for marginal analysis or the treatment of differentials. (It is always well to keep in mind the fact that an average merely represents the total which it subsumes.)

There are two groups of annual-product theories, one based on cost, the other on utility.

(1) *Annual-Product Theories Based on Cost.* Such thinkers as the early English Classicists, and to some extent the Physiocrats, illustrate this type. It is characterized by a tendency to regard income as a compensation or “reward” for costs incurred, which tendency leads to the thought that the total annual product in one way or another is given to men on account of the troubles they take in producing. Therefore, Distribution is in proportion to cost, or is cost-determined.

These costs are regarded as reflecting resistances which result from the limitations of the physical environment. Such thinkers are apt to stress the "niggardliness of nature".

Since Distribution is thus tied to production, and since it is based upon the concept of wealth as a stock of goods, it is not adequately related to the theory of value. In fact, it is usually associated with a one-sided cost theory of value.

The divorcement of Distribution from value theory, however, is more complete than a mere one-sided theory of value would require. Such thinkers go so far as to regard labor's share in Distribution as being a matter of *absolute* necessity, and therefore withdrawn from the field of value. They allow labor only a bare subsistence, and, in a sense, this makes wages a matter of physiology or biology, rather than economics.

Then the residuum or the surplus, if any, goes to the landlords or other dominant classes who, it seems, are to act as some sort of trustee or residual legatee for the nation's goods. (It will be noted that Marshall's idea of Distribution as dealing with a surplus, is related to this scheme of things.)²⁴

One difficulty is that a surplus above cost is hardly to be explained by cost alone. In the case of the Physiocrats, therefore, it is difficult to say that the theory of Distribution is a cost theory. (Moreover, the Physiocrats did not think of nature as being niggardly.)

The Physiocrats took as their starting point, the annual product of land. Assuming the gross product of the preceding year, they undertook to trace its course during the current year. Part of the gross product, said they, is required for bare subsistence, including not only the subsistence of laborers but the replacement of necessary capital goods. This deduction for subsistence goes to farmers, artisans, and the industrial and mercantile classes. The balance of the annual product from land goes to the government as taxes, and to the landowners, who were regarded by the Physiocrats as social guardians or trustees. The whole process was considered essentially as the circulation of the net earnings of the Sovereign, the state being regarded as a sort of business concern. The theory is

²⁴ Cf. above, p. 447.

really concerned with goods, but these were thought of as measurable in terms of prices or exchange ratios.

(2) *Annual-Product Theories Based on Utility*. It was not long before more idealistic thinkers took up economic problems, and in their minds the problem of Distribution was more closely associated with consumption than with production. Income, they regarded from the standpoint of benefit to the consumer. This, however, is but a difference in point of view; for they still began by assuming the existence of the annual product as a total quantity of goods. In one way or another, this quantity is to be given to men in their capacity as consumers.

The productivity of industry, including "gifts of nature", is taken for granted, just as the existence of wants for the goods which industry yields, is taken for granted. They then go on to stress the existence of certain kinds of wants which are called "needs". Finally, we find that needs are assumed as the real basis of what they call productivity. In other words, industries are held to be "productive" when they contribute things which are "needed".

Their concept is that of a total of utilities or goods, which are distributed according to the average needs of the people, thus involving no marginal analysis. (This suggests the "share-the-wealth" notion that always crops out in periods of depression or "hard times".) Their theory, moreover, like that they criticize, is not adequately related to the problem of value, because of its one-sided emphasis of utility.

Of course, they deal with the concept of welfare rather than wealth, thus being opposed to the other group which we have distinguished.

The best illustration of this classification is found in the thought of Sismondi.²⁵ He considers the annual national income as a means of consumption. To him, profits means the return secured by capitalists and landowners, who possess the wealth of the nation. It is of the past, being derived from the stock of goods of the preceding year's production. Labor, however, gets an income which, he says, depends upon the future; for he is really thinking of

²⁵ Cf. L. H. Haney, *History of Economic Thought*, 3rd ed., Chap. XX.

laborers as being consumers. (When a laborer becomes a mere consumer, he loses his productive function.) The idea of "needs" comes into his thought in connection with the emphasis of *leisure*, for evidently laborers can produce the income they really "need" in a sufficiently short time to allow considerable leisure.

Sismondi thinks of the annual product for a given year as being exchanged for the product of the next year. This year's labor power is exchanged for its share in next year's product; and capital is not only replaced, but its past revenue is exchanged for its share of the products of the coming year. In this way, he thinks that the annual production will equal the annual consumption, at least in physical quantity. He leaves unanswered, however, the question, How large is the share for which labor power will be exchanged? Why is it what it is? And, of course, there is the general question, How can we count on any balance between it and the product of next year?

2. Value Theories of Distribution

In contrast with the preceding group of theories, which are concerned primarily with the Distribution of physical products, we come now to a group of theories which are concerned with Distribution in terms of value, and which almost necessarily, therefore, treat of Distribution as a process of valuation. One of the outstanding characteristics of such theories is that, instead of dealing with totals or averages, they deal with the determination of the shares of Distribution at marginal levels; and consequently, the concept of differential returns plays an important part. The essential feature of this second group of theories, however, is that they *keep the value of products interrelated with the values of the factors or agents of production and their services*, considering the one now as cause and now as effect of the other.

(1) *Value Theories Based on Cost*, As usual, economists have differed in their value theories as to the relative importance attached to factors on the supply side as compared with factors on the demand side. Fully developed English Classicism usually held to a cost theory of value, and so it did in Distribution. In the

theories of Ricardo and John Stuart Mill, for example, we find Distribution concerned with the net earnings of industry, regarded as depending chiefly upon the expenses of the employing capitalist, wages being the largest item. These net earnings are measured objectively in terms of exchange value. (Almost always in the background there is present the thought that they represent goods—necessaries, comforts, conveniences, etc.—the net income being the benefits or gratification derived from the goods, as reduced by the pain costs incurred in producing the goods.) But although these theories assume that there is something net, over and above a bare compensation for cost, they hold that any surplus or net income is determined by cost! Both the prices of products and the expenses of producing them, are so determined. Cost is the central theme in such theories.

“Producers’ surpluses” arise as a result of the different efficiencies of different producers, which, assuming a given cost or expense, enable some to produce a larger amount of wealth than others. These surpluses are justified, so the theory runs, as tending to stimulate production, and further as tending to direct production into the most efficient channels. Thus ample recognition is given to the function of value as a socially desirable criterion of economic activity.

The emphasis is laid entirely upon production; but for the most part, production is considered as duly related to consumption.

In this connection, a serious weakness is found in the value theories based on cost, at least as developed by the Ricardo-Mill group of economists, namely the prevalence of the so-called entrepreneur point of view. English Classicism never seems to be quite unmingled with a social point of view; but in the economic theory proper, and especially in the theory of Value and Distribution, the tendency is to take prices for granted, to the serious extent of regarding the enterpriser’s “expenses”—themselves prices—as being the determinants of the price of his products.

Ricardo wrote the following words to Malthus: “Political economy, you think, is an enquiry into the nature and causes of wealth; I think it should rather be called an enquiry into the laws which

determine the division of the produce of industry amongst the classes which concur in its formation." ²⁶ In this statement, Ricardo regards the shares of Distribution as rewards to producers—rewards for incurring costs—except that the landlords, of course, get a "differential rent". Capital gets a residual return ("profits"), which is what is left of the marginal product on land, after laborers have received a little more than subsistence wages. The utility of, and demand for, the products of industry are simply taken for granted. While physical "products" and "values" are rather badly mixed, the tendency is toward emphasizing values.

(2) *Value Theories Based on Utility*. In contrast with the cost theories, we find developing at a later date an attempt to explain all values in terms of marginal utility. This included not only the value of products, but also the value of productive services. In this case, the idea of Distribution is not that it deals with net earnings, but that it deals with net *income*. Such income is measured not objectively, but, primarily at least, subjectively. There is much emphasis upon subjective values.

Accordingly, instead of discussing producers' surpluses, the utility theorists concern themselves with a sort of "consumers' surplus", which is the net utility of goods consumed, measured from a margin of indifference. Differentials are involved, but these differentials appear in the incomes of consumers.

"Productivity" is stressed in the utility theories of Distribution. One notes immediately, however, that cost of production is not considered, but only the marginal utility of products. Accordingly, the most important development in this branch of Distribution theory, the concept of "marginal productivity" as the basis for a comprehensive theory of Distribution, relies entirely upon marginal utility. Characteristically, costs are not allowed to play any fundamental part in determining "marginal productivity". The value of the factors or agents of production is derived directly from the value of their products; that is, it is said to be reflected back to them from the marginal utilities of the direct goods to which they contribute.

²⁶ Ricardo, *Letters to Malthus*; Price, ed.; p. 65.

The theories of the Austrian School and J. B. Clark are the most highly developed representatives of the foregoing type. Briefly stated, the gist of the thought of the Austrian School, as represented by typical members, is that the value of the finished product, or consumer's good, appears first and is primary. The value of such a good is determined by its marginal utility, through a process of direct imputation.

The existence of many of the consumers' goods, however, depends upon the functioning of certain indirect producers' goods. Those individuals who somehow contribute such indirect goods, get incomes in proportion to the value of "their" products. *The whole process is, in short, a matter of reflecting back marginal utilities from direct goods to indirect goods or agencies.*

For example, interest is received as income by those who own capital goods, merely because of a difference between (1) the relatively low present value of the products of the said capital, and (2) the future value of those products. In other words, the present value of the products is the value of the capital goods. On account of time preference, this value is less than the value of the products will be in the future. What the future value of these products will be, and why, are questions to which this theoretical approach affords no answer.

3. Criticism of Leading Classes of Distribution Theory

In appraisal of the foregoing broad types of Distribution theory, we may dismiss at once the "annual-product" concepts, which deal with assumed totals and averages without explaining their values. By failing to consider margins and differentials, they give no basis for the determination of shares in Distribution, or even for their measurement. It is a fundamental requirement of any understanding of the values, whether of products or of producers' goods, that the theory recognize the existence of differences and "differentials", and margins, both among men and among objects. Mere averages are not only unreal, but are apt to cause the thinker to assume the existence of the totals which they should represent, and therefore to overlook the problem of determining the margins upon which

such totals rest. Among the earlier thinkers, even those who attempted schemes of Distribution which allowed for differentials, did not tie their distributive shares into any valuation process. Their theories were naïve in assuming the existence of a total product, and were doubly naïve in assuming the value of that product.

In comparison with the foregoing, we find that even the cruder "value theories" of Distribution represent a considerable step forward. At least, they have lost a portion of the *naïveté* of the annual-product concept. To the extent, however, that these value theories go to extremes in relying either upon cost alone or upon utility alone, they are one-sided and inadequate.

As to the cost basis, which deals with Distribution as a matter of *compensation* to agents of production for incurring costs, we find the theories built upon it thoroughly incomplete, in that they make no allowance for subjective values. The relation of cost to value is left vague, and there is a tendency to take the entrepreneur point of view, which leads to circular reasoning. (The amount of the distributive shares is taken to determine value; at the same time, the value is assumed to be a factor in determining the amount of the distributive shares, or "expenses"!)

One important limitation of the cost theories is that they make it impossible to explain the amount of a producer's differential or surplus, since they do not deal with the utility or demand, which makes possible the existence of the differential or surplus. They take the utility and the demand for granted. It is as if the cost theories provide no utility roof for the economic structure. They may give us a cost curve, and it may be a rising one, but they give us no basis for determining a marginal point at which the rising cost will be checked; nor do they fully explain how goods produced at different costs may be sold at a uniform price.

As to the utility basis of value theories of Distribution, while it helps to an understanding of income, and brings the important concept of marginal utility into play, it is just as incomplete, taken alone, as the cost basis. Reference has already been made to "marginal productivity" theory, and this theory brings into clear light

the weakness of utility theories of Distribution. It is well to examine the matter briefly.

(1) *Marginal Productivity*. One great error of the marginal productivity theory of Distribution is that it starts with an assumption of given quantities of the factors or agents of production. We are asked to begin by taking for granted that such-and-such supplies of land, labor, capital, or enterprise exist. It is as if the marginal-productivity theorists do not want to raise troublesome questions as to the limitations upon the supplies of the productive agents.

Of course, this procedure means that the marginal-productivity theorist must assume that the agents or factors exist in certain proportions, in which proportions they are presumably combined. Their theory does not enable them to explain the said proportions in any adequate way.

The second great error in the marginal productivity theory lies in its assumption that the factors are passive, in the sense that their availability and functioning are not affected by varying the quantities used and the payments made to them. It does not allow for the fact that the various agents of production will function differently, according to the rewards which they receive. One of the most unfortunate results of this weakness has appeared in the thought of some economists concerning labor and wages. Obviously, if an employer can get laborers at lower wages, he will be tempted to do so; and he may even beat wages down, as is the practice in so-called sweat shops. The result is a lower marginal productivity for labor, and a still lower margin. There is no real limit short of subsistence.

Of course, the utility theories afford no explanation of objective values, since marginal sellers' offers or supply prices, cannot be explained by utility alone, but necessarily involve reference to disutility costs. They therefore *give us no basis for the determination of the margin of production, or for differentials based thereon.*

This cardinal shortcoming they endeavor to make good by adopting the doctrine of "opportunity cost" which, under some name or other, always plays a great part in their thinking.

(2) "*Extremes Meet*" in an *Individual Point of View*. It is most interesting to observe how, in the foregoing cases, we find again that "extremes meet". The cost theory of determining value begins with the factors of production and their "costs", emphasizing the latter. It tends to take the entrepreneur point of view, and a basic assumption in the thought of such writers as Ricardo and John Stuart Mill is that the price must "cover" the expenses of each individual enterpriser. But these expenses are water over the dam. As a matter of fact, it is frequently the case that business enterprisers have to sell for less than cost. Frequently they are not able to get enough for their wares to "cover" their expenses. Nor does it suffice to say that this is but the exception which proves the rule.

Now consider the utility theory. It begins, not with the factors of production, but with the finished product. Thus it concerns itself with the one probability concerning such products, namely that they have some utility. This utility is made the center of the theory. It is "reflected" back to the factors of production by a process of "imputation". Then, in lieu of the costs or expenses of the cost theorists, the utility theorists introduce the idea of "opportunity cost" or, as they sometimes call it, "utility cost". Why do they do this? Because they feel the necessity of explaining various resistances offered by the factors of production, which have something to do with the quantities of the finished goods with which they started their analysis.

Be that as it may, the interesting point is that this opportunity-cost doctrine is simply and solely an individual business man's concept—the entrepreneur point of view again! Opportunity cost is the individual enterpriser's method of figuring which of two or more lines of business is likely to be most profitable to him. He has made an investment or has bought materials. Very well; having gone thus far, he begins to feel that he is entitled to sell his product for enough to pay him interest on his investment, or to give him the market price for his materials. This is opportunity cost! But this utility-theory enterpriser often finds that he is no more able to "cover" his opportunity costs than the cost-theory enterpriser is able to cover his actual out-of-pocket expenditures.

F. *Summary*

The foregoing analysis of the different main types of Distribution theory, has exposed the fundamental weaknesses or limitations of each, and therefore has served to bring out the reasons for the definition of Distribution stated on page 493. It seems open to little question that economics as a science must consider Distribution to be concerned directly with objective values. These it cannot take for granted, as if they existed apart from the process of Distribution. Rather, it deals with the values of productive services rendered; which services, in turn, are part of the process by which the values of consumer goods are determined. The vital problem of Distribution is the problem of evaluating such services.

Accordingly, the theory of Distribution cannot start by assuming a total "annual income" or "annual dividend" which can be distributed during an ensuing fiscal period! (The concept of an average does not add anything.) It starts by analyzing the functions and services of the factors of production, not neglecting their technological bases. Thus it deals with observed realities—with margins and differentials. It deals with differences among concrete individuals and concrete goods, both direct goods and indirect goods. It seeks to explain the productivity and costs which form the basis of value, and equilibrium between production and consumption. It must reckon with everything which enters the determination of the value of products and services, and of the distributive "shares" therein.

Scientific economics takes a "functional" point of view in dealing with Distribution. Fundamentally, this means an emphasis of services performed; but incidentally, the performance is limited by conditions on the supply side of the performing agencies (labor, capital, enterprise, and land), and consequently, the functional Distribution necessarily involves a "Factorial Distribution"—an explanation of factor services. This, however, does not eliminate the human element; for the factors and their functions are directed by individuals.

Thus Distribution is a matter of motivating economic activities

of men. It has two closely interrelated aspects: it deals with *rewards* for productive services, and also with *compensations* for the costs involved in such services.

In this connection, it has been shown that the problem of Distribution concerns the gross income or total product of society; that is, economic science must explain both the replacement and the net reward of the several "factors". There is no more reason to assume the continued existence of capital and enterprise, for example, than there is to assume the existence of net interest or net profits.

Accordingly, there is a complete basis for equilibrium of forces—a balance between marginal utilities and costs. It thus becomes easy to avoid one-sided analysis and the extremes of "utility economics" or "price economics". It will be found expedient and feasible to explain how this equilibrium works out in a simultaneous determination of (1) the value of products and (2) the values of the "producers' goods" ("services" of factors of production); the joint demand for the factor services coming from the demand for the product, and the supply of the product coming from the joint supply of the factor services.

In a word, Distribution concerns objective values, as these are related primarily to production, and secondarily to consumption. *It is the process by which production and consumption are correlated through a balancing of costs and utilities.* Only when so regarded, can it become an integral part of economic science.

Chapter X

LABOR AND WAGES¹

It is well to begin the quest for a true theory of wages by considering a brief analytic classification of the various wage theories which have existed in the past, some of which will be found flourishing at the present time. Without going into a history of wage doctrines, we may distinguish first a considerable group of theories which attempt to find an answer to the question, How are wages actually determined? To the extent that they seek true explanations, they may be classed as attempts at scientific theories of wages.

I. ATTEMPTS AT SCIENTIFIC WAGE THEORIES

The aim is to present a mere sketch of the leading wage theories. Accordingly, no attempt is made to do full justice to any one of these theories. Indeed, the emphasis is laid frankly upon the essential and characteristic error which is to be found in each.

(1) *Subsistence Theory*. The idea was very common in the earlier years of the nineteenth century that wages inevitably tend to equal the quantity of food, clothing, shelter, and other necessities which

¹ Carver, T. N., *The Distribution of Wealth* (1904), IV. *Cyclopedia of Social Science*, "Wages", 292-300. (Beware "contractual wage" angle.)

John Davidson, *Bargain Theory of Wages* (1896).

M. Dobb, *Wages*, Cambridge Econ. Handbooks, VI (1928).

P. H. Douglas, *Theory of Wages* (1934).

W. S. Jevons, *Theory of Political Economy* (1871; 4th ed., 1924), V.

A. Marshall, *Principles of Economics*, 8th ed. (1920), Bk. VI, Ch. I-V.

A. C. Pigou, *Economics of Welfare* (1920); *The Theory of Unemployment* (1933).

L. Robbins, *Wages* (1925).

F. W. Taussig, *Wages and Capital* (1896); *Principles of Economics*, 3rd ed. (1929), Chap. 47.

F. Walker, *The Wages Question* (1876).

are required to enable the laboring population to subsist and to multiply at a rate sufficient to maintain their numbers. Frequently, this theory was based upon the Malthusian principle of population, which postulated the tendency of population to multiply more rapidly than means of subsistence. Sometimes this theory was called by its critics the "iron law of wages". As a description of the facts concerning wages at certain times and places, particularly in the early nineteenth century in England and France, this "theory" may have been substantially correct. Obviously, however, it has no value as bearing upon the sharing of the products of industry among the functional groups which jointly produce them. Insofar as anything laborers do in their capacity as laborers, there is no more reason why they should so multiply as to get only a bare subsistence, than there is why capitalists or landlords should.

(2) *Standard-of-Living Theories*. The harshness of the doctrine that wages are determined at the level of subsistence for laborers, was soon modified by making allowance for a higher level of "subsistence" than was at first considered "necessary". Allowance was made for the "comforts and conveniences" of life in addition to bare subsistence. This went along with a recognition of a "preventive check" upon population, such as "virtuous abstention". Thus it came to be said that wages tend to equal the amount required to maintain the existing standard of living. Of course, this theory, like the subsistence theory, makes no allowance for the *demand* for labor. It does not allow for the fact that the standard itself has to be explained, and may be a variable quantity. In fact, it leads to the question, What explains the standard of living? It is thus more complex than the question, What is required for subsistence?

(3) *Wages-Fund Theory*. Almost from the beginning, Classical economists displayed some tendency to think of wages as being determined by certain funds "destined" for payments to laborers. This theory had considerable vogue between Ricardo's day and the middle of the nineteenth century, about which time John Stuart Mill admitted its weakness. To start with, the assumption that a "certain fund" exists for the payment of wages, leaves unanswered

such questions as the following: How much is there in the fund? Why? How much of the fund is it necessary to pay to laborers? Why? Why not increase the fund by increasing labor's productivity? None of these questions can be answered without showing that the assumption of a wages fund is inaccurate and entirely inadequate as an explanation of wages.

(4) *Residual Claimant Theory*. Professor F. W. Taussig has adopted the theory that wages are the discounted product of labor. It follows that, if this theory be accepted, we must assume the existence of an interest rate when we discount the labor product; but if we thus first make allowance for interest,² we put ourselves in the position of leaving wages, wholly or in part, as a residuum.

This idea is closely connected logically with the wages-fund theory. The assumption of a pre-existing wages fund makes laborers, in a sense, residual claimants, dependent upon the maintenance of a fund of capital. When it is said that wages represent the discounted future product, or that real wages are paid out of the past products available, the question arises, How much of these products is there, and what determines the quantity?

(5) *Purchasing-Power-Creation Theory*. The author knows of no economist who has formally stated such a theory, but the idea was all too prevalent in political and business circles in the 1930's, and is implicit in the thought of some "welfare economists" from Sismondi's day to the present. It is that there is no limit to the amount which can be paid laborers, and that in order to give any amount of wages, it is necessary only to "create purchasing power". Generally, the assumption is that this act of "creation" will turn out to be justified, because laborers will then spend the sum given to them, thus "stimulating" business. It is obvious at a glance that this notion concerns only money wages, and is likely to be a part of some inflationary scheme which would result in rising prices, and possibly reduce real wages. Be that as it may, it is equally obvious that it fails as a theory, since it gives no explanation of wages. It does not answer the question, Whence comes the purchasing power

² As will appear in the next chapter, the interest rate depends upon the share in distribution which capital earns.

—must not purchasing power be earned by some act of production? How is the product of labor known and measured? Again, it is interesting to note that this notion goes to the extreme which is opposite to the wages-fund theory; for while the latter assumes an absolutely limited fund, the purchasing-power-creation theory assumes one that is unlimited.

(6) *Bargaining-Power Theory*. Few will deny—at least after a moment's reflection—that the much-talked-of bargaining-power theory is not a theory at all. It merely raises the question, What determines the bargaining powers and the bargaining attitudes of the laborers, as well as those with whom they bargain? In fact, one might say that the problem involved in any theory of wages is the problem of bargaining power. Almost inevitably, therefore, such thinkers as Sidney and Beatrice Webb will be found to have a preconceived idea as to what laborers ought to get, and therefore their “theory” reduces to the advocacy of policies which will give laborers such bargaining power that they can get the desired wages.

A theoretical objection to any such attempt at a wage theory is that it assumes that the supplies of the several factors of production are not changed by the shares which they receive. In other words, the thought rests upon the assumption of inelastic supply schedules. It is as if the thinkers assumed that laborers and their employers would bargain forcefully, but once a bargain had been struck, they would then proceed to work and employ as before, without regard to the results.

(7) *Marginal Productivity*. Probably the chief rival of the subsistence and the standard-of-living theories of wages is the marginal-productivity theory. This is the theory that wages are determined by the marginal product of labor, which product is ascertained by some process of imputing to labor the difference in the total product which results from changing the number of laborers, other things remaining equal(!). At several points in the discussion of valuation problems, the limitations of this sort of reasoning have come up. Here we merely ask, Where is the margin, and what determines its location? In this connection, what allowance is made for the cost of laboring? What quantity of labor is assumed, and why? We may

recognize that the "normal" economic wage is the marginal product of labor; but that does not answer the questions asked above. In short, it gives us no explanation of the amount of wages. The problem of the determination of wages may be formulated or defined as the problem of determining the marginal product of labor; but merely to define or formulate a problem is not to answer it.

Incidentally, it may be noted that in practice, knowledge of circumstances—including employers' accounting knowledge of costs—and mobility, are not sufficient to make it possible to regard marginal productivity as determining a basis of real wage rates, toward which wages paid are actually tending.

II. ETHICAL WAGE THEORIES

(1) *The Right to the Whole Produce of Labor.* It is common enough in Socialistic literature to find words to the effect that what labor should get is the whole produce of labor. This formula might be meaningless enough if it were not for the fact that it is usually coupled with the idea that laborers produce the whole product! In practice, therefore, it means a labor theory of value, and a distribution of the total income of society among laborers. Such reasoning makes no allowance for that element of time which wrecked the labor-cost theories of Ricardo and Karl Marx. It makes no allowance for the factors of organization and direction as related to the problem of business uncertainty. It makes no allowance for the fact that different individuals desire different goods, and that their desires change from time to time; in short, it makes no allowance for the demand factor upon which the productivity of labor so largely depends. In practice, it usually reduces to a cost-of-production argument.

(2) *Wants or "Needs".* The idea that laborers should receive as wages that which they need, including a certain amount of leisure, is often stated as if it were a sort of wages theory. When one comes to inquire just what these needs are, however, making due allowance for different men in different circumstances, it generally becomes apparent that there is hardly sufficient definiteness in thought

to serve as a basis for paying wages. One difficulty is that many men may have "needs", but be able to produce little if anything which contributes toward the supply of the "needed" goods.

(3) *Profit-sharing Schemes.* Under this head, may be put all proposals to raise actual wage payments by giving laborers a share in the "profits" received by employers. A classical case is the proposal of H. H. Von Thünen to pay laborers on the basis of the formula $\sqrt{A \times P}$, in which A equals the value of the product of labor and capital, and P equals the subsistence of the laborer and his family.³ This approach, however, hardly gives us a theory of wages, but rather a scheme for giving to laborers something over and above wages. It merely brings us to the problem, what *should* this share be, and how is it to be determined? It raises questions as to the contributions made by enterprise, and virtually makes all factors other than labor occupy to some extent positions as residual claimants.

III. THE DEFINITION OF WAGES

The first step for one who seeks a true theory of wages is to understand exactly what wages are. This is not easy.

We may begin by recognizing that, from the social point of view, mere *claims* cannot be included as income; since, even if we could count upon their being paid when due, there would still be questions as to how they are determined, and what basis there is for their continued existence. By the same token, contractual arrangements cannot be accepted without explanation. Are they consistently related to what labor does, either as compensation or reward? Do they register forces that tend toward economic equilibrium, or do they involve non-economic coercion? From the social point of view, we must deal with an income which as a whole depends upon the fundamental forces which govern economic life. From such a point of view, we may think of wages as always tending to be the objective value of the productive services of labor. Or, to put the matter another way, we may think of wages as being the income which labor could count upon receiving over a long period of time,

³ See L. H. Haney, *History of Economic Thought*, p. 369 f. (3rd ed.)

if all persons had equal opportunity, and, in that sense, freedom of choice. In short, from a social point of view, wages tend to be the specific product of labor.

This point we may illustrate by the simplified case of an isolated, unaided laborer working to produce what he needs on some remote frontier. What he is able to add to the materials of nature which he finds around him, is the product of labor;⁴ and it is also his wages. In social life to-day, however, labor contributes to a joint product along with other factors of production. Thus we find difficulty in ascertaining just what any one laborer adds, or what all laborers together add, to the joint product. We must begin, however, with the idea that labor is what labor does, and that, in the long run, labor can get only what labor produces.

In fact, we find in this thought a sort of scientific "ought"; namely, that labor—or any other factor—unless the necessary connection between cause and result be interfered with, will constantly tend to get what it produces; because otherwise it will not produce what it gets! Labor, like any other form of effective energy, requires motivation. That is, it is a means to an end, and would not exist without the end—the product. Human energy might exist for an indefinite period; but it would not be effective, nor would it be "labor", unless it were generally the "cause" of a result in the shape of a product. From the social point of view, therefore, we shall regard wages as directly related to the motivation of labor. Another way of putting the matter is that wages are what makes labor economically worth while—both to the laborers and to other members of society. Wages thus express the objective relation between labor and economic product.

Any other basis for providing an income for labor, as by giving a laborer either more or less than what his labor produces, would have to be defended on some ethical or other non-economic grounds.

(1) With this general understanding of wages as the specific product of labor, we must recognize that there are different ways of measuring the "product", and that we frequently find two different uses of the term, wages. "Real wages" are the product of labor,

⁴ There may be an element of "enterprise" in his activity. Cf. p. 642f.

measured as a share in the concrete commodities and services to the production of which labor contributes. (This is usually stated to be the goods which money wages will buy.) Perhaps the utility derived from the goods by the laborer, or his psychic income, is ultimately the most significant thing. For practical purposes, however, we have to assume that the psychic income is conditioned by the "real" wages.

"Money wages" in reality involve a mixed concept. Money wages may be thought of as the value of the real wages; in other words, the exchange value of the goods and services produced by labor, as recognized by others. For example, if a primitive laborer produces and sells firewood in some neighboring town, we tend to think of the price of the firewood as being his money wages (with a little over for profit). In this case, it is apparent that the utility which the laborer gets by the expenditure of the money is not necessarily equivalent either to the gratification utilities received by those who burn the wood, or to the disutilities which the laborer himself has incurred.

On the other hand, money wages may mean a sum of money paid by an employer to a laborer as an employee. This sum may have little or no connection with the goods which the laborer produces, or the exchange value which the employer finds them to have when he sells them. Such a concept of money wages makes their amount dependent upon a contract between two individuals, and is a matter of "business" and bargaining. It represents an individual point of view.

(2) From the individual point of view, wages are usually thought of as being "contract wages". A contract wage is a "price" paid by an employer to a laborer for laboring.⁵ But much labor is performed without contract, and receives no contract wage. Furthermore, the terms of contracts are not to be taken for granted by the economist. Contract wages are merely one of the expenses incurred by an employer, and more than this, can hardly be said. There is

⁵ Solely for descriptive purposes, we note that contract wages are usually money payments, and thus usually are what we might call "contract money wages". Occasionally, however, one finds wages paid "in kind"—that is, in the shape of goods—and thus we may find "contract real wages".

no explanation of wages, unless we go back of the contract, and inquire what forces led up to it, and perhaps if it is justifiable.

To be sure, those who talk about contract wages sometimes fall into a sort of marginal-productivity theory; but then it becomes apparent that the margin to which they refer depends upon the wage the employer has to pay, so that the reasoning is circular. In any event, it has already been shown⁶ that marginal productivity, taken alone, gives no answer to the question, How are wages determined? To say that contract wages are determined by marginal productivity, is much the same as to say that prices are determined by marginal utility. λ .

(3) The problem being to explain, or to develop a theory of wages from the social point of view, it now becomes necessary to distinguish between wage *rates* and wage *earnings*, a distinction which is very important from the standpoint of clear thinking. The idea of a rate is that it is a ratio; it is "per" something—per piece or per hour. Usually, wage rates are measured per unit of time—per hour, per week, per month. The importance of the foregoing distinction lies in the fact that it is wage *rates* that economists have had in mind when they have argued that wages are equalized in different occupations.⁷ It is also wage rates that economists generally have in mind when they set wages over against profits. Thus Ricardo and others, in thinking of wages rising as profits fall, often mean that wage *rates* rise as interest *rates* fall. It will be noted, of course, that the concept of a wage rate involves a price paid for labor, usually in the form of money, and it will be found that it usually involves the concept of a "contract wage".

In contrast with, but related to, the idea of wages as a rate, is the common idea of wages as the *total "earnings"* received during a given period of time. According to the common idea, this is the wage rate multiplied by the number of units of time worked, or

⁶ See pp. 503, 510f.

⁷ One should not think that a wage rate can be taken as an index of wages earned; or that an equalization of earnings would mean an equalization of wage rates, or *vice versa*. For example, even if rates per hour were equal, the number of hours per day, and the number of days per year, which the laborer could work, would differ on account of the kind of work done—to say nothing of the total years of his efficiency.

by the quantity of goods produced—the latter, in case the wage rate is per piece.⁸

As just suggested, the idea of wages as total earnings usually implies that they are an amount actually received by laborers for work done. So regarded, however, earnings would usually depend upon contract wages, since the payments received will presumably be those contracted for by the parties to a wage bargain. May it not be both clearer and better, therefore, to conceive of wage "earnings" as being the amount that is actually *produced* by labor, as such, during the given period of time? In this sense, they will be earnings indeed, in that no one under any circumstances could deny that laborers are justified in saying that they earn what they produce. It seems to the author that it is in this sense that economic science should take the word "earnings" as applied to wages, and that then it may be regarded as constituting what we may call "social real wages".

In this sense, too, it seems that we may say that labor "ought" to receive wages. It is in this sense that the wage earnings, regarded as products ("result"), are what the laborer would *tend* to get under free competition, his labor being regarded as "cause". It is what the laborer would have to get in the long run, except under conditions of coercion or absolute necessity, both of which exceptions involve an income that is not specifically related to labor.

The foregoing point should not be dismissed as being a mere play on the word, earnings. Certainly it cannot be dismissed by saying that wages are wages, and that what any given laborer gets under any given contractual arrangement is what we are discussing. Such is not the case; for we are discussing the forces which determine wages, and these forces are tendencies. They may be counteracted, wholly or in part. Contractual arrangements may be more or less favorable to the laborer than economic forces alone would allow.

⁸ It might be supposed that the total earnings, in this sense, would be primary, and the rate of wages be determined by dividing the time worked into the total amount of wages received. When such is the case, however, we are dealing with the kind of wage payment known as "salaries", which are made for relatively long periods of time, and are not as closely adjusted to current productivity as ordinary wage payments.

It seems, therefore, that the true scientific position for the economist, is to regard "earnings" as being "earned" in the sense that they are produced.

(4) This discussion of the meaning of wages may well be concluded by noting that wages as a "share" in the social income are necessarily an amount or sum of earnings; they are not a rate. Thus "wages" as a share in social income, if they do not mean the total amount received by laborers under contractual arrangements, which would be the part of the total goods income or the total money income that at any given time the laborers actually get, must mean the total product of all labor force exerted in a given period, or what labor contributes to the total income.

Thus we come to the question already suggested, namely, Is the total share received by laborers equal to the total product of labor? Do laborers really get the "social real wages"? Of course, there is the subsidiary question, whether the payment to any individual laborer is equal to the exact contribution to the product made by that individual laborer. This has an importance of its own, since it is conceivable that the total wages share received might be equal to the total labor product, while no single individual laborer got exactly what he produced.

When the foregoing question is asked, there arises another question, namely, As a matter of ethics, *ought* the total share received by laborers to be equal to the total product contributed by labor? Why should it not be more; why should it not be less? Suppose, for example, that laborers were not able to live as well on the things that they actually produce as some one thinks they ought to be able to live: in that case, should higher wages be paid in order to furnish them with the means for a higher standard of living? Politicians and reformers sometimes answer in the affirmative.

Certainly the wages actually paid may be less than the product of labor; and the economist may be able to demonstrate this, and to point out the reason. It is consistent with the scientific approach to say that, if wages as a share in the social income do in fact *tend* to equal the product of labor, the burden of proof is upon one who would obstruct that tendency. Moreover, when we explain how

wages are caused, and are thus able to determine what wages tend to be, we can tell something about *how* to get the maximum of wages. For the present, it is merely observed that, if more than this be attempted, it must be on one or the other of the following grounds: (1) that the productivity of labor would be so increased that the larger share would still not exceed the labor product, and that other shares would not be reduced below the products of other factors of production; (2) that other than economic values have become truly paramount (as in case of war), so that economic motivation and functional shares might not contribute to survival.

(5) In view of all the foregoing considerations, wages are now defined as being *that share in the social income which is attributable to labor, as such, and which tends to express the value of the labor service*. This is the "social real wages".

One thing that is entirely clear is that we must most carefully avoid in our thought the ancient error of assuming the existence of a total share; that is, of starting the search for a theory with the assertion that at the beginning of any given period, such-and-such a sum or fund existed for the payment of labor. We must carefully avoid, moreover, all talk about average wages or the average laborer, for this is but a disguised assumption of the total share. (The total divided by the number of laborers gives us the average, and the average varies with the total.) Since these errors usually attend an entrepreneur point of view, they are constantly arising, and are therefore to be guarded against with especial care. The individual business man assumes the going rate of wages, just as he assumes existing prices, price spreads, and price trends. Thus it does no violence to his scheme of things to multiply the going rate by the number of laborers, and so to jump to an unexplained total share. Obviously, however, this no more explains the existence of wages and the determination of their amount than does the assumption of some total to start with.

Subsequently, we shall find that the only way to arrive at the concept of labor's total share is to regard it as the sum of millions of different shares which are either the products of, or payments

received by, individual laborers. It will also be found necessary, however, carefully to explain each one of the products of or wage payments received by the individual laborers.

IV. THE NATURE OF LABOR

Such being the nature of wages, the question which next arises is, What is labor? If wages are the specific product of labor, it becomes essential to understand the nature and function of labor.

Usually when one speaks of "labor", the thought is really of a laborer. The mind visualizes individual laborers, tall and short, fat and thin—all more or less lost in the idea of "population".

Sometimes, however, the thought becomes more abstract and concerns labor time. Not infrequently, man-hours are referred to in the more technical discussions. Many will remember how the English Classical economists sought a homogeneous labor unit by assuming that a day's labor is always a day's labor.

Less frequently, too, one meets with the idea of labor as measured in "pieces" of product turned out, presumably by a laborer.

These different concepts suggest an important difficulty, and one which is the source of much confusion. This arises from the fact that labor is primarily energy—a capacity for producing effects—that is developed within the organism which is the laborer. Labor is not wanted for itself; it is valued only as it is embodied in some product. It cannot be valued as energy, for energy as such is not desired. Moreover, it is a mere *capacity* for doing work. Labor, however, can thus be regarded as a "force" directed toward the production of economic goods, and exercising a "power" that is measured in quantity of work done. As energy, it can be related, through force or power, to material products, to the existence of which it is a necessary prerequisite. Then the potential utility of such products can be referred back to labor as human energy, and thus to the source of the energy, the laborer.

It is also significant at this point to recall that laborers, as persons, are not transferable or appropriable. They are not themselves "products". In fact, they have "attitudes" which become of great

importance in determining the value of the labor which they have to sell.

The typical attitude of the laborer is one of desiring to acquire goods for immediate consumption, in return for services performed. A fairly satisfactory definition of labor, therefore, runs as follows: it is *human energy, including skill, applied to the gratification of wants, without direct regard to the objective value of the product*. Labor, as such, involves no important sacrifice of time-preference (saving) and no taking of business risks (enterprise). It is human energy expressed in units of power devoted directly to adding utility to matter or to rendering a personal service, independently of any valuation of different goods in exchange.

In view of the foregoing, the problem now becomes one of determining the relation between (1) the laborer as a source of energy, and supplier of power, to (2) the product, regarded both as a technological result and as an economic good that may yield income. At the same time that the laborer's energy is overcoming resistance, to accomplish "work done", or product units, he is overcoming negative desires for rest and leisure, and thus incurring disutility-costs which affect his motivation toward laboring. In reality, we have a sort of double problem, namely (1) the relation of the physical product to labor energy, and (2) the relation of the value of the product to the laborer. The problem of determining the quantity of product attributable to a unit of labor, may differ considerably from the more practical problem of determining the earnings of different individual laborers. It is important, therefore, to consider the different possibilities.

If the attempt be made to deal with the wage element in Distribution as being concerned with *laborers as persons*, the theorist at once runs into difficulties which seem to be insurmountable. Laborers, as such, are not homogeneous. The laborer is not a unit! To be sure, politically he has the same vote that any other laborer has. He has rights and duties as an individual which are similar to the rights and duties of other individuals. When, however, the economist considers him as a factor in production, the matter is not so simple. (1) Individual laborers are not equal in capacity, or the

quantity of labor energy which they can develop or give off. Thus, as laborers, they are not homogeneous. (2) Indeed, it is doubtful if they are qualitatively homogeneous, so essentially different are the forms of human energy. At least, labor differs in the "ability" involved, which includes skill,⁹ art, judgment, and trustworthiness. Finally, (3) the concept of "the laborer" as a unit is entirely inadequate, since it makes no allowance for *time*. It must be evident that in the expenditure of any form of energy, the time worked is an essential factor; in fact, energy has little practical significance aside from the quantity of power delivered in a unit of time.

Suppose, then, that we examine the possibility of taking the "man-hour" as the unit with reference to which wages will be measured. Are man-hours equal? At once, one reflects that the man-hour depends very largely on the nature of the man. Obviously, it makes allowance neither for the different quantities of energy or skill which may operate during the hour, nor for the amount of resistance offered by the materials upon which the force of the man-hour is expended.¹⁰ Again, is there any definite relation between the man-hour and the product, the economic real wage? The answer to this question is directly derived from the preceding point: Economics can not depend upon a necessary or logical connection between man-hours and product, when the man-hour does not contain all the elements which determine the productivity of labor energy. The gist of the matter is that labor-time is a mere potential; that is, it may be thought of as a force in the sense that a volt in electricity is a force. There remain, however, the questions of resistance, and of the amount of effective energy that is actually delivered.

Thus it seems that we are forced to consider some *unit of labor-in-product*, in the sense of *effective energy* or *work done*, if we are to meet the two chief difficulties, namely, the necessity of homogeneity, and the necessity of relation between labor and product. Here the analogy to electrical power may be helpful.

⁹ Skill may refer to ability to do something which without it could not be done at all, as well as to do something faster or better than others.

¹⁰ The idea of resistance in this connection may be compared with the ohm as a measure of resistance to electrical energy. See the preceding footnote on "skill".

In considering the terms used in electrical energy, we find "volts" for measuring pressure or potential force; "ohms" for measuring resistance to the effective exercise of this force; "amperes" for measuring the flow of electrical energy as limited by ohms; "dynes", as definite quantitative units of effective *force*; "ergs", as units of work done to accomplish a certain movement in space;¹¹ and, finally, "watts" for measuring effective *power*, being the rate of work done as measured in ergs per second. As a unit of work done, the watt may be used to measure the relation between the physical product and the energy expended, embracing the time factor.

Looked at in this way, it suggested that economists consider labor in much the same way that the physicist considers dynes and watts. A dyne is the force required to give a velocity of one centimeter per second, when acting on one gram. Such a concept, when applied to labor, leads up to the product, labor energy multiplied by time, with that product divided by the resistance within the laborer and in the material worked upon.

Now it becomes necessary to consider the element in labor which has been referred to as "skill". Assuming the energy and its expression as force, the problem of *applying* it remains. In order to explain fully the quantity of work done, we have to consider the manner of the *application* of the force, which consideration leads to that aspect of energy which we may call its efficiency. In the case of labor energy, this aspect is covered by the concept of skill.

Skill may apply to mental or to manual labor. In either case, the skill concerns the application of energy by performance. In either case, too, the performance may be routine in character, or it may require intelligence and ability to make adjustments.

These points become clearer in considering the two main aspects of performance, which are (1) knowledge, or knowing how to do the work, and (2) ability to deliver—the ease and facility of performance.

Back of all these aspects or phases of skill, however, lie the three fundamental elements: (1) Capacity to acquire skill, (2) under-

¹¹ The erg is a unit related to the dyne, meaning the work done by a dyne operating through the distance of one centimeter.

standing, and (3) facility. Some laborers do not have the capacity to acquire skill or the ability to apply energy skilfully. Differences in skill among laborers, as such, are partly the result of training and practice, and may to that extent be regarded as funded time and energy. To a large extent, however, they are the result of innate or early acquired differences in the "capacities" of workers. Laborers also differ widely in their ability to understand their work, which affects their labor performance in three chief ways: the ability to make adjustments to varying conditions, the ability to carry out general instructions, and expertness—knowledge within a specialized field. Finally, they differ in the facility of performance which comes with practice—manual dexterity or mental adroitness.

Thus we may sum up the main factors which are involved in the concept of labor as quantitative "force", as follows:

1. Number of laborers.
2. Energy per laborer:
 - (a) Potential force (latent possibilities, "strength", intelligence).
 - (1) Manual.
 - (2) Mental.
 - (b) Active tendency ("drives", "urges", positive desires).
 - (1) Manual.
 - (2) Mental.
3. Resistances:
 - (a) External (materials, working conditions, etc.).
 - (b) Internal (negative desires, fatigue, "painfulness", etc.).
4. Skill:
 - (a) Knowledge of performance.
 - (b) Facility in performance.
5. Time worked.

Perhaps two comments upon the foregoing classification will be found helpful. First, then, it is to be observed that an individual may be very strong and powerful, muscularly or mentally, but may lack incentive or be lazy. This fact illustrates the reason for distinguishing (a) potential from (b) active energy under heading number 2. Again, the third heading, "resistances", is in a class by itself, and might have been put first, or last, to set it apart. Items 1, 2, 4, and 5 are *positive*, and, in combination, explain the quantity of energy put forth. Item 3, resistances, is *negative*, and covers all

frictions, inertias, counteracting forces, lost motion, and waste, both within the organism and without.

Thus economics may deal with a sort of labor "watt", or unit of "skillenergy". Such a unit gives us a homogeneous measure of labor, and enables us to tie labor in with product.

While the foregoing suggestion appears to be logical, it must be admitted that it requires much abstraction, and presents not a few difficulties. How and where are we to find such a unit of labor as that suggested? How are we to relate "dynes" or "ergs" or "watts" of labor, to laborers themselves, whether regarded as potential energy, or as cost-bearing agents, or as human beings?

It seems necessary, however, to resort to an hypothesis, or an abstract theory, at this point. Moreover, the proposed hypothesis is not only not an impossibility, but actually appears to fit the facts. It is justified, first as enabling economics to avoid the crude notion of labor as measured by time units; and second as setting up a theory which allows the science to work out a consistent and complete correlation between the value of the thing we call labor and the value of the product to which it contributes, thus explaining wages.

The procedure may then be somewhat as follows:

First the quantity of labor, in the sense of work done, will be considered as represented in the physical product. Thus we may establish the basis for conferring value upon labor; for the concept of the labor "watt" makes it possible to derive the objective value of labor-power from the value of the product.

Second, the number of labor-power units will be considered as related to the laborer, this number depending upon the amount of the laborer's force (dynes), the time worked, and the material resistance experienced. This procedure results in a true concept of the product per laborer or per man-hour, which varies with the energy and skill of the worker. Of course, the value of the laborer's service follows the value of his product.

Third, the total number of laborers available are to be considered, allowance being made for the population, the natural capacities of the individual laborers, and the cost of acquiring "skill."

Thus we may arrive at the total share of labor in the social income.

It will be noted that labor, in the preceding sense, is strictly a quantity, and one that is definitely measurable in theory. This concept allows us to deal with labor quantity as a number of units to be measured on the OX axes of our value diagrams (e.g., page 303) along with the units of product, within each of which labor power is, as it were, embodied.

V. THE DETERMINATION OF WAGES

The foregoing reference to the theory of value reminds us that there is likely to be another aspect or dimension of labor, when considered from the supply side. Just as in the case of the supply of finished goods, so we find in dealing with the supply of labor that in addition to the concept of labor as a quantity of energy, force, or power—or, if you please, as number of laborers—there is also the concept of the *attitude of laborers* towards furnishing that energy. In short, there is the question of motivation, and the valuations of labor by those who supply it. Laborers not only labor; they also sell their labor.

A. Supply

This brings up the subject of the *supply prices*, or *offers*, which express the attitudes and tendencies of individual laborers toward disposing of their labor. These may be thought of as representing a desire to labor or to sell labor. In this case, we think of it as the intensity of a pressure upon the labor market. Or a labor supply price may be thought of as a resistance to laboring or to selling labor, which may vary in degree, and constitutes a force tending to sustain the level of supply prices. At least four groups of factors are clearly apparent when one comes to consider carefully the elements which enter into the supply prices of labor. These are as follows:

1. The Subjective Worth of Labor to the Laborer

In part, this point is frequently covered in the ordinary discussions of the labor market, but in part it has an aspect which is not

so commonly recognized. For example, there is sometimes a possibility that the laborer may be able to use his labor for the purpose of gratifying his own wants through production directly for his own consumption, without any objective value or price having been determined. A laborer may set up in business, and "work for himself". There have been periods in the history of several countries when there was a possibility that laborers might "go on the land", and this possibility has always tended to maintain wages, partly by affecting the laborer's valuation of labor.

More than this, however, there is usually an imputation of worth to labor which may be based upon a "symbolizing" process.¹² Thus a laborer may impute to his labor a worth that he bases upon the cost of acquiring the skill which his labor in part represents, this cost acting as a "symbol" of product and value of product. In certain skilled occupations, this element probably has a more direct bearing upon the supply prices of labor than is ordinarily realized. Or the laborer may be motivated by a sentiment which gives subjective worth to his labor, on the ground that it is essential to the existence of some valuable product. Doubtless, custom plays a considerable part in such valuations.

2. Costs and Expenses

The reader is here referred back to the discussion of disutility cost and expense cost¹³ as these enter jointly into the determination of value of finished goods. There an explanation is given of the logic of combining the two in one head, and their interrelations are pointed out. Under this head, we find the following items pertaining to the attitudes of laborers:

(1) *Direct Costs of Labor.* These constitute the basis for one of the most important aversions to laboring. No matter how pleasant labor may be under some circumstances, or perhaps temporarily under all circumstances, there comes a time when it ceases to be a desirable thing. Rest, change, diversion, and leisure are among the most definite organic or instinctive wants of man. Accordingly, if

¹² Cf. J. F. Dashiell, *Fundamentals of General Psychology*, Index.

¹³ See pages 252ff.

labor be strenuous or be continued beyond a certain length of time, these wants become the basis for strong negative desires or aversions concerning labor. These tendencies may be associated with (a) fatigue, which arises as the result of developments within the organism, and which is sometimes described as energy exhaustion. Then, too, there is the reaction of (b) irksomeness which may motivate the laborer under several circumstances, such as the monotony of his task, or the extent to which he is required to forgo leisure and recreation.

Finally, a point which is of considerable importance in the author's observation is the (c) *worry cost* which affects some laborers in almost any occupation, and all laborers in some occupations. This depends upon the amount of responsibility which is imposed upon the laborer. It is a very common experience to find a man objecting to a job, and even refusing to take one in case of need, on the ground that it carries too much responsibility.

(2) *Indirect Costs*. By these, are meant reactions pertaining to work which arise from attendant circumstances, and which tend to deter the laborer from doing the particular work in question. For example, there is the matter of danger, which will cause negative response to certain kinds of work on the part of the typical man, and result in a tendency to raise his supply price or offer. Similarly, work which is disagreeable for any one of many reasons (say, filthy or ugly surroundings) is likely to lead to higher supply prices than would otherwise be the case. The trouble of going to work at a distant point may also be a factor. Probably, too, uncertainty of tenure is to be mentioned in this connection. The insecurity of a position may be a source of worry or inconvenience that occasions aversion toward certain jobs.

(3) *Expenses*. Under this head, are included both current expenditures and past expenditures. Currently, the cost of living is to be considered, and some kinds of labor call for such expenditure of energy, or residence in such localities, that subsistence is higher than would otherwise be the case. In some cases, a standard of living must be maintained that virtually requires higher current expenditures. In some cases, too, the expense of travel or going to

and from work, may be a considerable item. As to past expenditures, there is, of course, the cost of bringing up the young laborer, and to this must often be added the expenditures incurred in the course of acquiring his technique or skill, whether as an apprentice or as a student.

While immediately, the foregoing items are mere "expenses", measured in money, in the last analysis they are generally related rather closely to disutility-costs. Thus they may be thought of as being payments for sacrifices made. In many cases, it is even true that the individual will recall (1) the efforts that he himself has made with more or less "pain", and imagine (2) the things that he might have bought with the money which he has spent on his training. The resulting emotional tendencies motivate him in bargaining for the sale of his services.

3. Attractiveness of the Work

The laborer himself has to go to work, and his human nature is thus an important factor. It is hardly necessary to attempt here any complete statement of the numerous considerations which may affect the attractiveness of the job to the worker. Among the more important ones, however, is the chance which it gives him for *self-expression* or for doing what he may call creative or interesting work. Perhaps even more effective in many cases, is the *prestige* which attaches to the particular kind of work done, as is illustrated by the fact that in their different ways the jobs of the lawyer and of the policeman or fireman, both have an appeal which draws many men to them without regard to direct compensation. Then there is the element of *gregariousness* which appears to be a part of the human nature of most individuals. It is a common experience among employers to find that a job is preferred if it is in a large office or brings the employee into association with many others, while a lonely job will be rejected. It may also be noted that the attractiveness of work is affected by the sort of "*exercise*" which it affords, an outdoor active life being attractive to some, independently of the wage received. Finally, one of the many angles of the tenure factor is probably to be mentioned here, namely that

the *security* of the possession of a job may add to its attractiveness in various indirect and subtle ways.

4. Holding Power

This item is probably what is chiefly in the minds of those who emphasize "bargaining power". It includes notably the degree of *organization* which exists among the laborers in any given case, and their capacity for collective bargaining. The strength of the union and the ability of its leaders may be important.

In case the laborers are not organized, or in case the organization is not complete, the factor of *competition* is to be considered. Much depends upon the number of men who are seeking the job. In case the population is dense, and particularly if there be a local congestion, the replacements for each job may be numerous. Incidentally, we note that the prestige factor has a bearing here, in that it explains the crowding which exists in certain occupations which are supposed to convey social advantages regardless of pay.

The laborer's financial position is naturally a further element in his holding power. This is likely to be affected by his savings or other *reserves*. The income of other members of the family is sometimes an important point. It is all too common to find laborers who must sell their services at once, thus becoming in a sense a sort of perishable commodity.

The problem of *substitutes* may present itself in a way that affects holding power, as is notably the case with labor-saving machinery. Whenever a new machine or technique is invented which may be used to replace labor, it is apparent that the holding power of the laborers affected, is reduced. On the other hand, the laborer who has to be relied upon for some delicate or skilled operation is often in a specially strong position for bargaining.

One of the most important aspects of "holding power," perhaps, is the matter of the *alternatives* enjoyed by laborers. In the case of a man who has several skills, connections, or whatever it may take to assure alternative employment, we are apt to find a strong holding power. We say such a man has "more than one string to his

bow". He has the benefit of a sort of composite demand, since he is able to render different services in different markets, and can choose the strongest.

Although it is interrelated with the other points, the element of *will* or sentiment is to be mentioned separately. As in all human valuations, hopefulness and morale affect both worth-feelings and will-to-sell.

In conclusion, it should be noted that labor is often in the position of a perishable commodity, and as such it is often affected by an inelastic supply schedule. When a laborer must sell his services for what they will bring, it is possible that the objective value of those services may fall to a level which is hardly consistent with the standard of living of a human being. One of the most important characteristics of labor is that the number of laborers seeking work may be the result of conditions affecting marriage and procreation. Thus the supply quantity of labor has all too often been a factor affecting the supply intensity.

5. Summary

In brief summary, on the supply side of labor, we find that the technological and valuation elements are intimately related. The laborer is a source of energy. If his energy is sufficient, it overcomes resistances, and, as power, becomes "work done". This appears in some product. Meanwhile, and *pari passu*, the laborer as a human being is exerting himself to overcome resistance; and in doing so, he has to act counter to certain desires for leisure, variety, etc., which, as disutility costs, become the basis for a feeling of the subjective worth of his labor. This gives rise to a supply price for his service as represented in the product.

B. *The Demand for Labor*

In considering the demand for labor, it is again necessary to remember that we are not concerned with the quantity of labor alone; we are concerned in large part with the *intensity* of the demand for labor, as this may be expressed in the bids which potential employers make. This may be called "schedule demand".

1. Labor Demand Is Indirect and Joint

Nevertheless, labor is a factor of production. From this fact there flow two consequences: (a) The labor is not wanted for itself; the demand for it is indirect and derived from the product to which it contributes. More than that, the demand for much labor comes directly from the demand for capital goods, and is thus doubly indirect. If an engine is not wanted for itself, how much more is this true of the labor which is employed in manufacturing the engine. (b) Labor is wanted along with other factors of production with which it must cooperate; thus the demand is a joint demand. In other words, it is not only derived from a product, but it is derived from a joint product.

It follows, too, that the demand for labor is partly a matter of technology, a point which is important to grasp. It means, for example, that an employer's demand for labor is to be considered as related to a definite quantity of labor power, and that this quantity of labor power has a significant relation to the quantity of the product which is involved. Obviously, since the product is joint, and requires, let us say, the joint functioning of capital and labor, the employer's attitude towards labor is much affected by the proportions of labor and capital which are technically required for the product in question.

Bearing these facts in mind, we should still think of demand for labor as related to the valuation of the services¹⁴ of laborers, and as being a matter of the intensity of "demand prices", or employer's bids. In fact, the point is that the demand-price for labor, is *the demand-price for a quantity of labor, namely the definite quantity of labor power which is considered desirable per quantity unit of product, as judged by the one who is responsible for the result. On the demand side, the problem of determining wages, is the problem of determining, first, what quantity of labor is required or desired in a physical unit of product, and then how "intensely" it is demanded.*

¹⁴ The labor "service", or the quantity of labor power, is made definite by considering it as "work done", as measured by results in the shape of products. Thus the demand for labor is closely analogous to the demand for kilowatts.

2. Maximum Labor Demand; the "Product of Labor"

In the light of the foregoing analysis, we can say that the demand for labor reduces to two elements: One is the ultimate maximum which is set by the demand for (not the value of) the total product; the other is the allowance that must be made for factors other than labor which are required for the product.

Perhaps the easiest way to segregate in one's mind the demand for the total product as setting the ultimate maximum demand for labor, is to think of an isolated laborer working on marginal land without any capital. In this case, the laborer's own desire for the product (perhaps in comparison with other things), is the "demand" for the labor. Then the total product is the wage.

It becomes necessary, however, to consider at this point what a "product" is, and to note the distinction between the "product of labor" and "the total product". Even our isolated laborer finds that his effort or labor force brings different product-results according to the kind of natural resources he finds in his environment. And he may abstain from consumption and do some irksome waiting, in order to make implements which add to the product of his labor. Aside from "services", which are either enjoyed directly as personal services, or are valued with relation to their effect upon some tangible object, "products" consist of matter which has been so adjusted as to fit it for gratifying human desires. Stated as briefly as possible, a product is as follows:

- (1) *Matter*: elementary utility as available in the physical environment, or "land".
- (2) *Adjustments in matter*, with relation to human desires, made by power derived from some source of energy: (a) Form utility; (b) place utility. Such adjustments require individual human energy, which is "labor"; extra-human energy, which is made available through "capital goods"; and organizing and directional energy, which is "enterprise".
- (3) *Availability in time*: Time utility. This requires dealing with "uncertainty", through processes of "discounting" and making "advances", which is done by enterprise in its mercantile aspect, with the aid of the saving and investment required for capital goods.

A little consideration of the nature of an economic "product"

must lead to the conclusion that, regardless of what form of economy may prevail—individualistic or socialistic—products are not reducible to labor alone, save in such exceptional cases as but illustrate the truth of the rule.

In other words, the total product is a joint product, and allowance must be made for factors other than labor. Therefore, *the maximum demand for labor is actually derived from something less than the demand for the total product. It is the demand intensity for the total product, minus the minimum that is necessary to induce the functioning of any other factors that are required.*

In order to simplify the concept, one may go to the marginal use of land, and thus eliminate any necessity for considering the differential rent which may arise on account of diminishing returns from land. Then one is faced with the necessity of making some allowances for capital and enterprise—an allowance sufficient to induce abstinence and waiting, and an allowance sufficient to induce the entrepreneur to undertake business risks.

With reference to these allowances for capital and enterprise, we may at once assume that *some* minimum allowance is necessary for the existence of the product; and this conclusion is important. What that minimum is, however, and how much more than the minimum may be required, are the gist of our problem. It is the problem of attaining a balance between the value of the total product and the value of the services of capital and enterprise.

This problem may be expressed as the problem of determining the most productive proportion among the factors of production. It must work out in practice through substitutions of one factor for another, presumably at margins of indifference. These margins, in turn, are determined by the equilibration of various elements which enter into the employer's willingness and ability to pay, and the relative quantities, technical efficiencies, and supply prices of the several factors of production.

Of course, if the laborer works for himself, the question becomes, How much capital should he use, and what risks should he run? Without much imagination, we can conceive of a process of choos-

ing the most productive proportion among the factors going on within the mind of the one individual.¹⁵

3. The Two Demand Problems: (1) Combining Proportions for the Factors, and (2) Marginal Productivity

In reality, the problem of demand thus outlined has two aspects: (1) the proportions in which the factors must be combined,¹⁶ as determined by technological and supply-price considerations; and (2) the marginal demand-price for the joint product of the several factors of production, which must motivate and sanction the joint total of the compensations and rewards out of which come the incomes of the several factors. The second question is the one frequently referred to as "marginal productivity". In the last analysis, on one side, the marginal-productivity equilibrium goes back to the positive desire-intensity of consumers of the product; on the other side, it goes back to the negative desire-intensities (costs) of producers. As the scientific economist sees it, it involves a comparison and equilibrium between demand (bids) for product and supply (offers) of all factor services. Immediately, and in most practical cases, it is the employer-enterpriser's judgment (or other "response") concerning the relation between the price of a product, and the costs and expenses of the combination of factor services which he uses to produce that product, including his own.

These crucial questions will be considered next.

(1) *Proportions in Which the Factors Are Combined, or the Percentage of Labor Units in Product Units.* Primarily, the problem of proportion presents itself as a technological problem; that is, there must be a problem concerning the technological proportions in which the various agents can be used and the technological proportions in which it is physically "efficient" to use them, even before the value of the product or the value of the factors is determined—in fact, *before any price exists*. For example, without unreasonable abstraction, we can think of some new product which

¹⁵ By a process of trial and error, this process may in time take on the nature of a "determination" which may have some degree of objectivity.

¹⁶ That is, the proportions in which they *can* be combined, and which—within limits—determine how they must be combined.

has never before been manufactured, or we can think of some old product made for the first time in the different circumstances occasioned by migration to a new country. We may think (hypothetically) of all factors of production as existing without reference to the value of the product or to the costs of the factors themselves. On this assumption, there is merely a general want for the product, to start with, and a necessity for using in combination different means of getting the product. When considered in this way, we perhaps get as close to the causation of the mere physical product as is possible, and certainly as close as it is desirable for the economist to go.

Thus, before we can have a value-of-product, we find ourselves concerned with technological relations among factors or agents of production, all with relation to some physical product. It is a question of the relation of energy to matter—production in a physical sense as involving an adjustment in the materials of nature. Considered in this way, we are on the primary level of technological “efficiency”, and our concern is with energy, skill, and the like.

On this level, the problem of proportions among the factors of production reduces to two considerations, which are as follows:

(a) *The nature of the raw material* involved, with especial reference to its resistance to acquisition or manipulation for production purposes. Here come such questions as the resistant character of the raw material, the nature of the process which may be required to make the desired change in its form or location, and the nature of the product itself. The perishability or storability of the material or product may determine the relative quantity of equipment for storage or rapid delivery that is necessary. In some cases, the nature of the product will determine whether machinery can be used or not,—this might not be possible with so-called works of art. The use of power, and the technique of mass standardization, are also dependent upon such considerations.

(b) Even if the material and product be the same, however, the combining proportions for the several factors of production may be different. In addition to the resistances which lie in the nature of the material, there are the particular sorts of resistance which

arise from the *scarcity* or the lack of *technical efficiency* of the various agents of production. Under this head, probably the outstanding point is the *relative abundance of the several agents or factors of production*.

It is most important, however, to observe that this relative abundance must be considered, not merely in numbers or quantities of material agents, such as number of laborers in the population, but in terms of energy, or of potentiality to make such changes in matter as may constitute an addition of utility. *Without regard to value*, we may thus consider solely the scarcity or abundance of the factors of production as measured in terms of utility-creating efficiency. This is the problem of degree of scarcity, *regardless of cost*. Thus we may think of labor strength and skill as being balanced against electrical energy operating a machine. Either of these technical methods may be used almost to the exclusion of the other in making shoes, the question on this level being, Which will turn out the most shoe utility in a given period of time, or with a given quantity of energy? Again, we may consider the nation's supply of entrepreneurial ability as being dependent upon the number of enterprisers and their technological efficiency in handling an aggregate of labor, land, and capital so as to turn out the largest number of physical units of product or the largest total utility.

(c) Finally, among the elements which enter into the determination of the combining proportions among the agents of production, we must by no means forget that there are human "resistances", which are among the reactions of man to the nature and scarcity of materials and agents. These are the *resistances conditioned by the nature of man*. They result from the fact that human desires for goods cannot be gratified without running into some opposition from desires for rest, leisure, immediate consumption, variety, etc. They are variously described as disutilities, aversions, or costs. The "human equation" is the decisive element here.

These resistances are directly related to "supply prices", which are the offers made by the person who has the productive agent for sale. His subjective worths, costs, and holding powers are, as we have seen, the determining factors. These are not objective values

or actual prices. In the last analysis, they are subjective, and exist before any objective values come into existence.

For example, if for any reason the holders of capital get into a position where their supply resistance is reduced, we may expect to find a smaller proportion of labor used; for the simple reason that the service of capital is made available more cheaply, and is likely to be substituted for labor. This result, of course, does not follow necessarily, since in some cases the possibility of substituting capital for labor would be small or nil. Of course, too, it must be borne in mind that this conclusion does not hold unless we assume that the technical situation remains unchanged, for obviously new inventions or processes might set up counteracting conditions.

Such, then, is the method by which we arrive at a determination of the proportion of any product unit that is attributable to labor. It all works out in the shape of the relative importance attached by enterprise to labor.¹⁷ Incidentally, there is involved a determination of the number of labor-power units which will be found in a unit of product; or, perhaps more accurately, the proportion of labor-power units that will be found in the product as contrasted with the units of land, capital, and enterprise which remain to be described.

(2) *The Marginal Product, and Its Value.* It now remains to consider the determination of the margin—that is, the margin of production, or the point beyond which the production of any good will not seem worth while, and at which it will therefore generally tend to cease. This consideration also involves a determination of the marginal contribution made by labor and by each of the several agents of production. In short, it remains to explain the determination of “marginal productivity” of labor—the productivity of the marginal units of one of the factors of production.

All too frequently, economic textbooks virtually drop the discussion at this point, merely stating that wages are determined by the marginal productivity of labor, and leaving us with the impression that the employer's demand for labor is the determining

¹⁷ Cf. below, pp. 591ff., in the discussion of the demand side of the determination of interest.

force. Obviously, however, the marginal product of labor is the equilibrium wage, or the point toward which the free play of economic forces tends to drive contract wages. We must therefore go on to explain how marginal productivity is determined.

C. Equilibrium of Demand and Supply; Marginal Productivity of Labor

The very concept of a "margin" as a final degree of employment or level that just pays, or as a stopping point, is one of equilibrium. When we take a social point of view, the general margin of production in any industry is seen to depend upon a balance between the demand intensity for the joint product and the supply intensities of the several factors of production which are required. It represents an equilibrium between all the costs of production (including those peculiar to the enterpriser) and the utility of the product. This determines the margin of production and the value of the marginal product. Then the marginal productivity of labor, is labor's share in the marginal product. It is determined as a part of the process by which the value of the product is determined; and incidentally, the shares of the other factors are determined at the same time. We may consider it as an equilibrium between the demand for and supply of labor power.

Thus the second of the two questions raised on the demand side (the other one being that concerning "combining proportions"), involves a consideration of supply forces, and leads to our final statement of the theory of wages. In a superficial sense, this may seem to be a so-called marginal-productivity theory; in reality, it is a value theory, or one based upon equilibrium between demand and supply forces. "Marginal productivity" is merely a convenient formulation of the problem.

1. The Wages of an Isolated Laborer

At the outset, one may use the device of a simple, abstract case. This will be no final proof, but it will have the merit of enabling one to visualize the essential elements of the problem which would otherwise seem so complex at first that the mind would find diffi-

culty in accepting them. In short, it is well to consider a laborer without capital, working for himself. In this way, we eliminate other factors from consideration, and thus have no question of a combining proportion or percentage. In this way, too, we eliminate the question of exchange and the price of the product. The thought of an isolated laborer, working somewhere in the remote backwoods or on a desert island, may help one to visualize what is in mind. The product is assumed to be for direct consumption, and there is no question of the purchasing power involved in any commodity or money. Under such simplified circumstances, what must occur?

First we find something which, in a simple way, represents demand. This is the individual laborer's desire for some such product as berries or game or firewood.

This desire is turned into "effective" demand by means of the laborer's energy. By his labor, he has ability to get the product which he desires. His labor is thus, in a sense, his purchasing power. It turns his want into a demand.

This leads to the matter of supply intensity. The isolated laborer finds that he grows tired of his efforts to pick berries, or catch game, or carry wood. Along with his desire for food and fuel, are his negative desires for rest, leisure, and variety. Effort beyond a certain point becomes irksome or painful, and arouses aversion. These conditions affect his tendencies and motivation toward the goods. They enter into his subjective worths. Incidentally, they serve to limit the supply quantity of the good in question.

Now, it becomes necessary to consider the part played by the quantity of the material available. This thought at once leads to two closely related quantities. One is the quantity of the product measured as a number of units, say handfuls of berries, pieces of game, or sticks of wood. The other is the number of labor-power units which are required to enable the laborer as a consumer to have any one unit of the product in question. These labor-power units cannot be reduced to mere time, for they involve different degrees of strength, skill, risk, and pleasantness, to mention only a few of the circumstances which will differentiate one labor-hour

from another. In short, we again come to the concept of a labor dyne or watt—a unit of energy expended or of work done, as conditioning the units of product, and commensurable therewith.

Finally, one of the most important aspects of this bit of analysis is to be noted, namely, that from the labor-power unit through the product unit, the laborer is able to replace his capacity to labor, and to restore his expended energy. Thus the product is related to the “purchasing power” which lies in the laborer’s energy. This is the circle of economic life.

This simple analysis might be illustrated by the usual diagram, with its OX and OY axes, and its demand and supply curves. The demand curve would be the laborer’s desire for the product in question, backed by effective labor power. The supply curve would be the laborer’s disutility costs, or the negative desires associated with the effort required to overcome resistances to production. On the OX axis, would be measured both units of product and of labor-power, the latter representing the work done in producing the product units. On the OY axis would be measured units of the laborer’s positive desires, negative desires, and aversions. Where the demand curve and the supply curve intersect, a magnitude is determined which represents the equilibrium value of the amount of labor-power¹⁸ in a unit of product. This is the subjective value of the marginal product of labor.

The chief conclusions to be drawn from the foregoing analysis are:

First, and most significant of all, is the fact that the value of the product unit and the value (subjective) of the labor-power unit are determined at the same time. The laborer decides what is worth while to do, and in so deciding, he decides two questions: What product? How much labor? Obviously, in this simple case, both the product and the labor must be deemed worth while, and equally so.

Second, there is involved a balance between a positive desire or

¹⁸ This quantity may be more or less than a standard labor-power unit. Doubtless there would be more labor power required in producing the marginal unit of product, and this might be thought of as 1.5, 1.75, or 2 labor-power units, etc.

demand intensity, and a negative desire or supply-resistance intensity, which is an equilibrium between utility and cost, regarded as motivating forces. We may also think of it as closely approximating an equilibrium between the marginal utility of the product and the marginal disutility of the labor. This is the sense in which the energy expenditure is worth while.

Third, the quantity units have a two-fold significance. Each *product unit* may be thought of as representing the "quantity bought" as it would occur in an exchange between two different individuals. At the same time, the *labor-power units* used to produce the product may be thought of as the "quantity sold". The two are equalized in value.

Finally, the producer-consumer relationship is easily grasped in this simple case. The individual's "demand" (effective desire) is limited by the quantity of goods that he produces. He must eat in order to live,—in this case the only way he can eat is to work,—and the amount of his subsistence is pretty directly related to the labor-power units he develops.

The chief conditions that may modify the preceding statement are the richness of his physical environment, the course he takes in equipping himself with tools or other instrumental goods, and the enterprise he shows in organizing and directing these various productive agencies. These factors may all affect the total product that he can get with a given quantity of labor energy; and, of course, they influence the quantity of labor that he will consider it worth while to perform, or the marginal productivity of labor. Thus he may have to decide how much labor he desires to put into making labor-saving devices instead of working directly to get goods for immediate consumption. The marginal product of his total labor—and his wages—may depend upon the effectiveness with which his labor power is divided between the two kinds of goods.

2. Marginal Productivity under the Employer-and-Employee Relationship

A more complex case may now be taken up—one which is more in accord with actual life. Here we have to deal with an employer and

an employee. A large quantity of capital goods, in the shape of plant and equipment, is used. The product is produced for sale, and thus exchange is involved.

(1) *The Demand Side of Marginal Productivity.* Again, the explanation of marginal productivity begins with the idea of demand. Now, however, it is considered not as the individual's desire for food, but as the employer's desire to make a profit by employing labor, resulting in a demand for labor. The question is, How much is he willing and able to pay? The answer to this question depends upon two considerations, and it is most important to observe the nature of each, as well as the distinction between them. Fortunately, the preceding discussion has laid an ample basis for understanding them.

(a) *The intensity of demand for the joint product.* If the product be shoes, the intensity of demand for labor depends in part upon the intensity of the demand for shoes. There is no need to go into the details of the demand for shoes, however, since these are covered in a general way in the discussion of the value of finished goods.¹⁹ We merely note that one element is the marginal utility of shoes to the buyer; another one is the purchasing power of the buyers. It is this second one which makes most trouble in the theory of Distribution, since it is all too common for economists to assume its existence without explanation, and then to reason in a circle. Let it, therefore, be borne in mind that this purchasing power factor in the demand for both shoes and shoe labor, remains to be explained. The point will be taken up in due course.²⁰

(b) The second element in the demand for shoe labor depends upon the proportion of the total joint demand for shoes which is assigned to labor. By this, is meant primarily *the percentage of the demand-price for shoes which the employer is willing and able to bid for shoe labor*. At the least, certain minimum percentages must be directed toward factors other than labor, in order to motivate them to function to the extent required in the production of the

¹⁹ See above, pp. 244ff.

²⁰ See p. 546f.

given product. As already seen, these depend largely upon technological conditions and the relative abundance of the factors, together with the valuations of the individuals involved.

But in addition to the labor which is employed directly in shoe manufacture, there is the labor which is employed in the manufacture of shoe machinery and leather. The demand for this indirect shoe labor also is derived from the demand for shoes; and in a sense, through shoe machinery and raw materials, competes with direct shoe labor for its share of the sales of the joint product. In this way, conditions such as business uncertainty, interest rates, and inflation, which affect the demand for or supply of capital goods, affect the demand for labor in consumer-goods industries. Thus anything which reduces the demand for shoe machinery, tannery equipment, and similar producers' goods, is apt to cause unemployment; and this, in turn, may both reduce the demand (purchasing power) for shoes and increase competition for jobs in shoe factories.

Finally, the competition among employers is especially to be mentioned at this point. For example, the existence of any element of monopoly or economic friction, such as custom and ignorance, may cause employers to pay a wage which does not reflect the true economic demand for labor. The degree of competition might affect the share of any of the factors of production; but labor is the one most likely to be affected unfavorably, since employers are often owners of capital and land, and are apt to be especially interested in profits.

(2) *The Supply Side of Marginal Productivity.* On the supply side, the determination of the margin is more complex. We have to do here with the supplies of several factors of production, in the sense of their intensities or "resistances"; in other words, we have to do with the supply prices of laborers for their labor service, of capital owners for their capital service, and of enterprisers for their enterprise service. According to the relative abundance and technical efficiency of the several agents at a particular time and place, and the attitudes of those who have them for sale towards supplying their several services, the percentages in which they are com-

bined will be determined, insofar as the combination is governed by supply intensities. If the shoe factory is located in a congested area where many laborers eagerly seek work at its doors, it is easily possible that the "supply prices" or offers of labor may be so low that a larger proportion of labor power will be combined with a smaller proportion of machinery service than would be the case at some other point where the situation is different.

(3) *Quantity*. The quantity of labor for sale is a matter quite different from the supply-prices, or attitudes of laborers toward laboring. As to quantity, we have first to consider the product units, in this case, shoes. These consist of (1) the elementary utility of matter, hides and other raw materials, and (2) the form, place, and time utilities which have resulted from the application of human energy assisted by more or less capital efficiency.

In each pair of shoes, there has been embodied, as it were, a number of units of labor power, and the services of capital and enterprise. To begin with, there is required a fixed and absolute minimum of labor energy, as determined by the physical material and technological conditions; and the resulting quantity of labor power is not a matter of choice. In addition to this necessary minimum quantity, however, there are to be considered the supply resistances mentioned above under the head of supply, and the employer's worth judgment or valuation of labor in comparison with other agents as touched upon under demand. To the extent that these valuations govern, the quantity and marginal value of the labor power used, are a matter of choice.

In a broad way, the most important aspect of the foregoing theory is that it does not assume that the price or objective value of the product exists in advance of the value of the labor-power and other factor services which enter into the production of that product. It is a theory which requires and allows the simultaneous determination of the values of products and productive agents. In this, it is the author's judgment that the theory fits the facts.

There follows a simple diagram designed to illustrate the synchronous determination of the price of a finished good and the labor which enters into that good.

In the following diagram, the curve DD' illustrates the demand schedule for a product. The curve dd' is in the demand schedule for labor-power units. It is derived from DD' , the area between the two representing two elements: (1) a minimum allowance for capital and enterprise,²¹ and (2) such additions thereto as the supply resistances of capital owners and enterprisers may make economically necessary.

The curve SS' represents the supply schedule of the sellers of the finished product. In part, this schedule rests upon the magnitudes represented by the curve ss' , which is the curve of supply-prices for such quantities of labor-power as enter into the production of a unit of the product. The curve ss' represents the supply intensity of labor, based upon costs, holding power, and subjective worths, as these affect the attitudes of laborers toward laboring. At the intersection of the curves, dd' and ss' , we find the point, L , which is the normal value of the number of

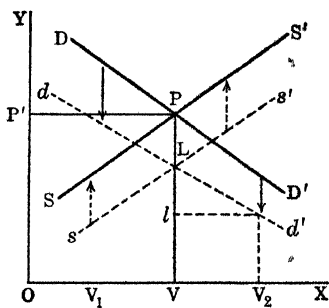


FIG. 25

"labor-power units" contained in a unit of the product. Each labor-power unit represents energy applied with a certain intensity for a certain time and meeting certain resistances. Thus the magnitude LV represents the value of the marginal product of labor, or the normal wage. It is a part of the magnitude PV , which is the marginal value of the product.

The quantity OV represents the number of product units which is exchanged at the value PV , each product unit representing a certain number of labor-power units, depending upon the conditions which have been described on the pages immediately preceding.

Let it be supposed that for one reason or another, perhaps as a result of the growth of population, the number of labor-power

²¹ The enterpriser may have undertaken to pay wages before he has actually known what the physical product of labor will sell for.

units increases to a point where, if they were embodied in products, the quantity for sale would increase to OV_2 . A situation arises in which the quantity of labor-power for sale is greater than the quantity which is demanded at a wage rate based upon the value, LV . Assuming the labor demand schedule, dd' , to remain unchanged, it becomes apparent that the highest possible value for labor-power units, with the quantity of products at OV_2 , is indicated by the point l . (This point is determined as follows: A perpendicular is erected from the point V_2 to intersect dd' , and from the point of intersection a line horizontal to OX is drawn to intersect the line PV .) The obvious result of this situation is that the value of a unit of labor-power decreases, and the wage rate tends to fall. Then, unless the quantity of labor-power supplied be reduced, more labor-power will tend to be used in proportion to the services of other factors of production. In other words, if technological conditions permit, the proportion of the physical product that is attributable to labor energy, is increased, while the *relative* importance attached by the enterpriser to a *unit* of labor-power is decreased.

Eventually, dd' and SS' may be forced down, thus tending to restore an equilibrium similar to that at PV , but at lower levels.

D. *The Explanation of "Purchasing Power"*

It now remains to deal with the old problem of the circle of economic life, and to explain the element of "purchasing power" in the demand for labor, which was left dangling under the head of demand intensity.

It will be recalled that in the simple case of a laborer who, without capital, works to satisfy his own needs, the equivalent of what we ordinarily call "purchasing power" is the power of the laborer to labor. As a consumer, he "pays" for what he consumes with the effective labor energy which he "spends" as a producer. It is this that is "embodied" in the physical product, which he desires, and which, if any choice exists, has subjective value. Moreover, it is this labor "price paid" that requires action contrary to desires for rest, leisure, diversion, safety, and the like, thus giving the product a

"subjective worth". The purchasing power is "earned" if the product serves to maintain or replace the energy expended, and any other elements essential to doing the work; for then the food and clothing produced are consumed, and in the process of consumption not only restore the energy exhausted in production, but also maintain the will to work and the capacity to be gratified by products.

In the case now before us, however, we find that the relation between labor-energy and product is not so simple or direct. It involves a complicated system of exchange values for numerous products, and a difficult and varying problem of combining different factors in the production of each product, all worked out by means of money payments. Thus the "purchasing power" of labor, like that of the other productive agents, is traced to its source only with difficulty.

Two lines of connection exist between the quantities of product and work done on the one hand, and purchasing power on the other. (1) The simplest and most direct line of connection is that between the product-units (say shoes) and the purchasing power of those who demand the product (shoes). This is the problem of distribution among different industries. The scientific student of economics, taking a social point of view, will readily see that only by expending labor energy in producing shoes does the shoe laborer become able to pay for shoes, as well as for other goods which he needs, say bread and automobiles. Furthermore, a similar connection lies between all human energy expended in production, and the gratification of wants of human beings as consumers. All those who combine in making bread or automobiles, thereby produce goods which have subjective value to most individuals, including those who make shoes. Under a system of division of labor, and in an exchange economy, each producer (whatever his special function) gets his purchasing power by producing a "good" which some other producer desires in his own capacity as a consumer. Products which are salable, are also potential purchasing power. Most of each laborer's product constitutes a demand for the products of other laborers in other industries.

(2) The other line of connection is less simple, since it involves the difficult problem of Distribution among the factors of production which jointly function in producing a given good or group of goods. It connects the services of the several factors of production with their respective shares in the total purchasing power that each particular joint product affords. This it does *immediately* through the enterpriser's valuation of the services of labor, land, and capital.²² The percentage of the product that results from the employment of labor-power units, as determined by material and technological conditions, and by the relative supply-resistances of the several agents of production, determines the proportion of the demand price for the product, shoes, which will be reflected through the employer to labor. (Then the percentage of the demand for shoes which is reflected to labor, largely determines the purchasing power of those consumers who are engaged as laborers in producing shoes.) Similarly, the other factors of production get their shares of income and purchasing power. Thus the problem of Distribution is also the problem of the *functional aspect* of purchasing power, as this enters into the demand for goods.

Then if we think of bread, automobiles, and all other products as being demanded and supplied in a similar way; and if, instead of limiting our illustration to shoes, we generalize it so as to deal with the demand for all labor, the total supply of all factors of production, and the total quantity of all products, we can say that purchasing power is derived from production in a way that can be explained definitely. Most of each factor's specific product, constitutes a demand for the products of other factors.

At the same time that the values of products and the values of the services of the agents of production are determined, the purchasing powers of the producers are determined.

E. Summary

The foregoing theory gets us first to the value of a labor-power unit. It involves both the concept of work done (say watts), as mani-

²² Note the hazards borne by the enterpriser in bidding for labor and capital before knowing what the product has sold for.

fested in the utility of a product unit, and also the concept of resistance overcome, as manifested in the costs involved in the expenditure of labor energy. These are brought into equilibrium.

We may think of laborers, *in their capacity as factors of production*, as being somewhat analogous to cells in a battery. The voltage of the laborer is his labor-energy potential. The services rendered by the laborer in production are thus to be valued as being both the result of labor-power units produced (with attendant costs) and work done (as evaluated by employers or direct purchasers or consumers).

The marginal laborer is the one among those employed who gives off the fewest labor-power units in a given time under given resistances. Other laborers, having more energy, give off more effective power units, and accordingly tend to earn supra-marginal wages. The total "share" of labor in the social income is or tends to be the total contribution made by laborers to the total joint product. This is true because it is or tends to be *the sum of the values of the services of the individual laborers*.

Having thus built up the total share of labor by putting together logically determined products of individual laborers, we may now think of the share as being divided among the total number of individual laborers in such a way as to give an "average" wage. Obviously, this last step, however, is meaningless from the standpoint of economic theory. Its only significance exists from the standpoint of practical personal problems of subsistence, standard of living, and the like. Laborers as consumers, or laborers as citizens, are not functionally the same laborers as those who, as producers, supply labor energy to create scarce utilities.

VI. PECULIARITIES OF "LABOR" WHICH AFFECT THE DETERMINATION OF WAGES

Labor energy being so intimately associated with the laborer as a human being—a father, a voter, a church member, etc.—it is easy to understand that there will be many practical conditions which react upon the attitudes of the laborer as a seller of productive energy. The outstanding practical peculiarities are as follows:

(1) Laborers are *living organisms*, and without life there could be no labor. It follows, therefore, that subsistence in the shape of food, clothing, and shelter must be provided for laborers as a matter of physical necessity. It follows, too, that *some "minimum wage" must generally be paid for labor, without any regard whatever to the product.* Philosophically, a nice question might be raised as to whether any payment in the form of a wage that is made for the purpose of providing subsistence, is in reality an economic quantity, since it enters the field of absolute necessity. Strictly speaking, one could not call such a payment a wage. For practical purposes, however, economics has always considered a "subsistence wage" as being a wage, probably on the assumption that no employer would pay it unless earned. Doubtless, too, there has been an assumption that labor in general is productive.

This condition should serve as a warning against optimism in assuming that wages as actually paid are actually tending toward the value of the labor service, or that labor is being employed most productively.

(2) In order that labor may be performed, there must be human beings who are willing and able to labor. *A human being is more than an organism.* As a human being, a laborer requires more than subsistence, namely a standard of living; and accordingly, for practical purposes, we must recognize that, as a rule, the minimum for wages is somewhat above a bare subsistence level. If such a minimum is not forthcoming, whether through readjustment of economic processes or the population, it indicates that values other than economic are becoming predominant. (This condition may arise as the result of attempts to establish a standard of living which it is impossible to sustain; in which event, the predominance of non-economic values will be short-lived.)

As human beings, too, laborers resist employers who resort to pace-setting tactics, designed to speed up the work. Such resistance on their part may or may not be justified by economic considerations; and history shows abundant evidence both of the abuse of pace-setting tactics and of ill-advised resistance to them.

One of the most interesting and important results of the connec-

tion between labor and human nature, is the resentment which we find among many laborers as a result of the differentials which arise in wages. There is a strong tendency among laborers to favor levelling down processes, which results in standardization of wages with little regard to the different efficiencies of individual laborers.

It will be noted that both in the resistance to pace-setting, and in the resentment toward differentials, laborers as human beings tend to limit and restrict the relationship between the potential energies of laborers and the product of labor.

Finally, as human beings, laborers are affected by loyalties, likes and dislikes, and attachments to persons and places. These "human ties" influence their attitudes toward laboring, and affect the supply prices of labor. Personal equations are important. Immobility and custom play no small part.

(3) Laborers are often *hired in groups* or "gangs". As a result, there is a tendency to standardize wage payments on the basis of man-hours or man-days. In practice, this tends to restrict differentials, and to reduce the relationship between labor energy and labor product.

(4) Being organisms and human beings, individual laborers, when employed in groups, can be played off against one another in the bargaining process. As individuals, they are sometimes in a position which is similar to that of perishable commodities which must be sold with little regard to their "worth". The result of this situation is the necessity of *collective bargaining*, which is required to equalize the holding power of the employee with the holding power of the employer. It must be recognized in economic theory, however, that collective bargaining, involving group action as it does, tends toward levelling down differentials in wages actually paid, with the result already indicated. Another consequence is that the problem of selecting agents to represent the labor groups becomes important, and gives rise to the phenomenon known as the "labor leader". Finally, there is the problem of ethical and legal responsibility in making contracts, which as a practical matter is an important element in the process of collective bargaining between employers and employees.

(5) It is essential to note that the quantity of labor available is *not controlled entirely by economic considerations*, nor can it be assumed that it is adjusted according to demand and supply intensities. To a considerable extent, the quantity supply of labor is a matter of population. The plain fact is that little laborers-to-be are born without much consideration of the market for their services. Thus it is not only possible, but in most cases probable, that the quantity of labor energy will be increased, whether there is a demand for it or not.

If the number of laborers is increased, we may logically assume that the total number of labor units available will also be increased. Then the value per labor-power unit will tend to decline, as explained on page 546. Moreover, assuming competition, the margin of production as a whole may be lowered, in connection with an increase in the total output of products.

Thus there is intimately involved, the human element, which in large part is responsible for the "labor problem". It has long been recognized by economists that the chief ground for optimism in this respect is that the establishment of a reasonably high standard of living will tend to induce most laborers to adjust their marriages and limit the size of their families in order to prevent such an increase in labor units as would reduce wages below a level that all can agree upon as conducive to welfare.

(6) As a human being, the laborer's activities are subject to more or less modification and direction by means of education, changes in living conditions, and the like. On the one hand, it is possible to raise his standard of living, and thereby to increase his energy, will to work, and knowledge, thus enabling him to pay for the means used to raise his standards. On the other hand, it sometimes happens that an increase in real wages satisfies the laborer's desires for goods to such an extent that he seeks to reduce his productivity. This he may do by demanding reduced hours, easier working conditions, or otherwise.

These considerations show how inadequate marginal productivity is as a fundamental explanation of wages; for they show how marginal productivity may be determined by the wage paid. They

also show the futility of assuming that "other things remain equal" while changes are being made in the proportions among the factors of production.

(7) *Non-competing Groups*. Long before the nineteenth century closed, it became evident to even the Classical economists that the Ricardian assumption of equalized wages is too much at variance with reality to be available for scientific use. The doctrine of non-competitive labor groups was formulated by J. E. Cairnes, his idea being that the total laboring population may be divided into several groups in accordance with the different physical and intellectual capacities of men. Some occupations require greater abilities than are possessed by all men, and those who are unable to compete on the higher levels are forced back into some lower group. Between groups there is no competition, and each group therefore has a separate margin.

In short, there are different *qualities* of labor, and these give rise to different labor markets.

The classification of non-competing wage groups which seems most illuminating is as follows:

- A. Non-creative labor (predominantly subject to economic motivation):
 - 1. Mental labor
 - a. Responsible mental
 - b. Automatic or routine mental
 - 2. Manual labor
 - a. Responsible manual
 - b. Automatic or routine manual
- B. "Creative" labor (subject to non-economic motivation):
Inventors, artists, etc.

The foregoing classification seems to be almost self-explanatory. It has long been thought that the degree of responsibility which a laborer can assume is an important line of cleavage between classes. For example, the mechanic who is able "to work from a blue print" and thus carry out a job independently with only general instructions, is very different from one who requires constant and close supervision, or who merely fills in between two machines.

It also seems important to recognize that a good deal of labor of a sort is done by people who work from some inner urge or impulse

to self-expression. Most authors know that a great deal of work is done without much thought as to the exchange value of the product.

From the theoretical point of view, the most significant fact is that in the world of actuality there exist different labor groups, each having a separate margin. Accordingly, there are wage differentials in each group which may be measured separately, each separate system of differentials being measured with reference to its own margin.

Obviously, the existence of these non-competitive groups tends to break up the process of adjusting the total population, and therefore the total supply of labor-power units, to the demand for labor services. It greatly limits the extent to which wages or the values of the specific products of labor, are equalized among different industries and trades.

In the light of the foregoing conditions, most of which modify the working of competition and freedom of choice, it is fair to ask if the theory of wages developed in the preceding pages has much practical significance. Is there not so much economic friction that the "tendencies" will not work? Are there not in practice so many counteracting forces, that the "equilibria" have no reality?

The answer is that, despite the friction and the counteractions, we must have some standard for our thought about labor and wages. The problem exists. We cannot avoid it; labor organizations would not let us, if we would. We must think about it, and attempt to understand it. The phenomena of labor and wages must be explained with relation to their economic importance—their meaning with relation to our attempts to gratify our wants for scarce goods.

Thus it is that a reasonable theory which is consistent with what is known about various parts of economic life, and which does not assume any impossible condition, is expedient—probably necessary. Our minds will not let us rest. We must keep trying to understand, in order to act, and more especially so, since we must act together in groups.

For example, attempts have been made to solve the wages ques-

tion by adopting a sliding scale for minimum wages, and some of these attempts have been based upon the idea of adjusting wages to changes in cost of living. This basis, however, is futile, since it implies a subsistence wage theory. The practical approach must begin with the price of the product to which the laborer contributes. From that starting point, any such attempt must proceed to estimate labor's specific contribution, making due allowance for technological conditions and differences in productivity among individual laborers, somewhat as explained in this chapter. Incidentally, the logical necessity of considering simultaneously the value of the product and the values of the several factors of production, as being jointly determined, is apparent. Such is the practical value of abstract theory.

Again, the great problem of unemployment is unlikely to be satisfactorily solved without the aid of such theory as has been used in this chapter. We may agree with Professor Pigou that if laborers were entirely mobile and subject to competition for their jobs, the way to get full employment for all who are willing and able to work, would be to allow and encourage real wages to become adjusted to the demand for labor so that the total quantity demanded would be equal to the total quantity of labor available.²³ But we must also note that "relief" and make-work policies financed by tax payers, will strongly tend to reduce the demand intensity for labor, and therefore the quantity employed. In short, we must allow for conditions affecting all the items listed above as entering demand and supply schedules. Then, and not till then, can we work intelligently and effectively toward a scientific solution of unemployment.

The student of economics should not become impatient and turn toward revolution. He should reflect upon the progress that has been made. If we compare standards of living and working conditions in 1939 with those in 1839, this is apparent. Is there any reason to suppose that further progress will not be apparent in 2039?

Only a continued attempt to understand economic life, and the laborer's part therein, can hasten the process or insure the result.

²³ Cf. A. C. Pigou, *Theory of Unemployment*.

Only with the aid of theory, can there be that consistency in treatment of means to ends, which is essential to lasting progress. For example, much remains to be done in perfecting collective bargaining; but the economic test must continue to be the result in making wages conform to labor's share as determined in theory. Again, theory shows how so-called scientific methods of wage payment may work, but only as they allow for human desire disposition and the nature and value of materials; and they can increase wages only as they increase the specific productivity of labor. As to the tendency of population to multiply, the importance of the standard of living has been emphasized, high standards tending to establish a relation between labor supply and demand. This relation, however, must be understood as depending upon all the conditions which affect the marginal productivity of labor, and no standard of living can be long maintained by laborers who do not earn it by labor in the sense that is explained by a true theory of wages.

The true theory of wages may become not only an explanation of economic friction, but also a means of understanding the problem of eliminating such friction!

Chapter XI

CAPITAL AND INTEREST¹

Perhaps there is no one in the long list of economic terms which is subject to so much disagreement as is the term "capital". Certainly it well illustrates the importance of exact definition. No scientists, and least of all, economists, can agree unless they use a given term to denote and connote substantially similar objects.

Unfortunately, too, lack of definite understanding concerning the terms used in economics plays a part in shaping the policies of governments and business men. For example, the differences of opinion which have arisen in economics concerning the nature and functions of capital have doubtless contributed, at least negatively, to the misunderstanding by bankers and public officials of the use of credit and the policies adopted with reference to controlling interest rates.

The point which is to be stressed here is that the essential basis for defining and classifying the several productive agents with

- ¹ E. von Böhm-Bawerk, *Capital and Interest* (1922); *Positive Theory of Capital* (1930); *Recent Literature on Interest* (1903) (Bibliography).
- E. Cannan, *Review of Economic Theory* (1930), IX.
- T. N. Carver, *Distribution of Wealth* (1932), VI.
- G. Cassel, *The Nature and Necessity of Interest* (1900).
- J. B. Clark, *Distribution of Wealth* (1899).
- F. A. Fetter, *Economic Principles* (1915), Ch. 20-25; "Interest Theories Old and New", *Amer. Econ. Rev.*, IV, (1914), 68-92; "Capitalization vs. Productivity", *Ibid.*, 856-859.
- I. Fisher, *The Rate of Interest* (1907); *The Nature of Capital and Income* (1906); *The Theory of Interest* (1930); "The Roundabout Process in Interest Theory", *Q.J.E.*, Vol. XVII, p. 13.
- L. H. Haney, *History of Economic Thought* (1936), 302 f., 345, 368 f., 516, 618 ff. (Historical).
- F. H. Knight, "Neglected Factors in the Problem of Normal Interest", *Q.J.E.*, XXX (1916), 279; *Ethics of Competition* (1935), X.
- A. Marshall, *Principles of Economics*, 8th ed. (1920), Bk. VI, Ch. vi; Bk. IV, Ch. vii and ix.
- K. Wicksell, *Lectures on Political Economy* (1935), 144 ff.

which we deal in economics, is functional. The definition, if it is to be significant, must be based upon the function, and must therefore also make allowance for the supply of the factor in question. Any valid and important distinctions between or among the several agents must depend upon the answer to the question, What does each factor do? How does it serve man? In addition to this, there is the question, how much can it do? And hard on the heels of this question, comes the crucial one, Is it worth while?

These latter questions bring up the supply side of the problem, and make us consider upon what the existence of the agent in question depends. Whence does it come? How is it maintained?

All the agents or factors of production contribute to production, and to income. Otherwise, they would not be agents of production. Their contributions, however, are made in different ways, and depend upon the existence of objects—the factors of production—which have different sources of supply. All the agents of production derive their values from their productivity, in the sense that if there were no products to which they contributed, they would have no value. This self-evident fact, however, leaves unanswered the question, In what degree does any given agent contribute to the product, and why? In short, it is an unreal and extremely idealistic concept of man and his relation to his environment, which seeks to define goods entirely in terms of human desires. One readily sees that such a concept may lead to wish-thinking.

A. *The Nature and Definition of Capital*²

The term "capital" appears to have first come into use as a private individualistic concept. It designated *any stock of goods held for income, and kept intact for that purpose*. Thus it would include all sorts of objects, regardless of their sources of supply or degrees of supply limitation; and land would be included. Thus, too, it would include objects which yield any sort of income to an

² Cf. E. Cannan, *A Review of Economic Theory*, Ch. VI; T. N. Carver, *Distribution of Wealth*, Ch. VI; F. A. Fetter, "Capital", *Encyc. of Soc. Sciences*; L. H. Haney, *History of Economic Thought*, see index under "Capital", especially p. 560 f.; Bohm Bawerk, *Positive Theory of Capital*; F. W. Taussig, *Principles of Economics*, Ch. V.

individual; which makes the concept include acquisitive sources of income, and perhaps even predatory sources such as burglars' tools. Any object which an individual might rent or hire to another, including such consumers' goods as houses, saddle horses, and "dress suits", would be a part of his capital; although from the point of view of the one who might have the use of such an object through rent or hire, it would be but a direct source of utility in consumption.³

As one considers this original concept of capital as a stock of goods held for income, at least three important questions arise. First, there is the question of the "netness" of the income. Is there not an important difference between consumers' goods which are rented by one individual to another, and producers' goods which contribute to supplies of these consumers' goods? Is there not another important difference between goods, such as land and buildings, and the *claims* to them which may arise through the creation of such instruments as mortgages or bonds? Obviously, neither the consumers' goods which are "rented", nor the claims which the mortgagee or bondholder holds, are adding anything to the wealth of the society. They do not constitute the basis for a *net* income to the group considered as a whole.

The second question pertains to the *method* by which the goods in question may contribute to income. Are they immediately available for consumption, or only mediately? Do they contribute directly or indirectly? Those goods which are held or used for the direct and immediate gratification of desires, are to be classed as consumers' goods. Those, however, which contribute only indirectly—and which therefore are not wanted for themselves, but only as an indirect means of desire gratification—are logically called producers' goods.

In the third place, the concept of capital as being any stock of goods which are held for income, leaves unanswered this vital question: Whence comes the physical supply of the goods in ques-

³ Consumers' goods rented out for use are not capital, both because they are consumers' goods, and because they are merely "rented", so that their "use" is valued separately from the goods.

tion? How is the supply to be maintained or added to? What about its mobility? When one undertakes to consider the "stock of goods" from this point of view, one soon becomes impressed with the fact that there is something about what is commonly known as "land" that differentiates it from all other goods which may be held for income. Incidentally, too, one soon comes to realize (as did Ricardo and Marx long ago) that among the goods which are recognized by all as capital goods, there are important differences connected with the durability or length-of-life factor.

Without further discussion, it seems that enough questions have been raised to indicate clearly the reason for defining capital somewhat more definitely and narrowly than is done by those who conceive of it merely as a stock of goods held for income. Incidentally, the same observation applies to those who would define it as the *value* of any stock of goods held for income. It also seems that the distinctions which have become necessary amply justify the definition of capital which has on the whole been generally accepted by Classical and Neo-Classical economists, namely: *those durable tangible instruments, produced by man, which contribute to the net social income*. This is the meaning of those who have pithily expressed their concept of capital by defining it as embracing all "produced instruments of production".

1. Abstract Funds Are Not Capital

The importance of the technological concept of capital is to be stressed at once. Capital is not capital unless it is embodied in some object, so that it may function as a means of production. Abstract funds of value do not function at all, unless as mere media of exchange; and miscellaneous stocks of goods held for income, if they function, do not function in any homogeneous way.

As the author understands the thought of J. B. Clark,⁴ it is that "interest" is related to an abstract fund of values, which is abstract capital; while "rent" is paid for the use of concrete producers' goods which function in concrete ways in producing concrete products. So considered, there is no essential difference between capital goods

⁴ See J. B. Clark, *Distribution of Wealth*, Chap. IX, and pp. 335-337.

and land. When measured in terms of value units, both are held to be abstract capital which may earn abstract interest. When measured in physical units, however, they are both concrete capital goods which may receive rent. Thus total "interest" equals total "rent". Apparently the rate of interest is to be arrived at by dividing the fund of capital value into the "rent" for some period; for the income of capital is derived from the net product ("net rent") of concrete goods (capital). *Immediately*, therefore, the "rent" appears to govern the interest rate; ultimately, the abstract interest governs the rent. Clark says that abstinence originates this "capital", but that, once originated, time plays no part. He makes some allowance for the difference in the life periods of various concrete "capital goods"; but says that the period of production does not "necessarily" (!) affect the rate of interest. He assumes an endless process of replacement to maintain intact the supply of such concrete capital goods, this replacement apparently going on continuously and automatically.⁵

According to this idea of an abstract fund, however, is capital not measured in terms of value? And is the total value of capital not something which begs the question as to the productivity ("rent") of the capital goods themselves? Surely, it should be clear that productivity in terms of value, is merely the sum of (1) the physical products attributable to the capital goods, multiplied by (2) the value of units of those products. The products are units of commodities which may have a value per unit. But the *number* of units of commodities is affected by the technical efficiency of the capital goods in question. To this extent the value of capital is a matter of physical output, and is affected by the limitations upon the supply of the productive agent. On the other hand, the value per unit of product is partly a matter of the demand for those products; for obviously, if the products are not desired by anyone, neither they nor the agent which contributes to their production will have any value.

It does not seem possible to arrive at any concept of an abstract fund of capital until we have first explained the productivity of

⁵ Followed by F. H. Knight and others.

the capital goods, and then the nature of the limitations upon their supply which insure that the value of the products can be funded. (Obviously, if the supply becomes unlimited, the product will have no value, and there will be no fund.)

Again, the abstract fund idea appears to beg the question involved in the determination of interest *rates*. How can we arrive at the capital value which is to be divided into the "rent", without first having capitalized the income value attributable to the capital goods? And how can we capitalize such an income without having already determined an interest rate? Or how can we divide the total fund of abstract capital into "net rent" for a *period of time* without allowing for the different life periods of concrete "capital goods", which alone yield "rent", in a way that would make them an essential factor in determining the rate?

The plain fact is that we have here another illustration of the way in which an individualistic or entrepreneur point of view may warp our logic. (Or the other extreme, the organismic social point of view may be taken, and lead to similar errors.) The business man takes the interest rate for granted, very much as he takes prices for granted. He himself does not make either. Thus it is adequate for his individual purposes to adopt some rate or other, which in view of what he conceives the risks to be, he will call "reasonable"; and to use that rate as a basis for capitalizing some income which he estimates. Such a process, however, takes entirely too much for granted, to be of value to the economic scientist.

2. Credit Is Not Capital ⁶

The increased use of credit in the business world and in public finance, no doubt, has had a considerable influence upon men's thought about capital. Certainly, there are ample evidences of a tendency to regard credit as if it *were* capital, the custom of treating so-called "money rates" as if they were interest rates, in the sense of a return on invested capital, being one aspect of this confusion.

⁶ Cf. J. A. Schumpeter, *The Theory of Economic Development* (1934), Chap. III. Professor Schumpeter's approach differs from the author's. It is illuminating and stimulating.

The fact is that "money rates" really pertain to credit as distinguished from capital.

Few of the ideas of J. M. Keynes had more serious consequences in the years following 1932 than the argument that investment is saving, that saving is not-spending, that saving and spending concern mere currency, and that currency is or may be mere credit.⁷ Of course, it follows that he makes no allowance for capital goods, their costs, or their productivity. This procedure is designed to give an appearance of simplicity to the proposal that the state undertake to control the national economy by means of manipulating money rates. Such simplicity, however, is unreal—nor is its unreality lessened by Keynes' resort to taxes imposed upon saving-investment as a supplementary means of control.

When analyzed, such a scheme of thought appears to be based upon a series of negative assumptions, such as the following: (1) that savings do not necessarily involve individual sacrifices in any way that would make interest necessary; (2) that no motivation is required to insure the replacement of the existing stock of capital goods, but that it automatically remains intact and gives off a perpetual stream of services; (3) that there is no separate problem of investment in concrete instruments of production, or of the replacement of such instruments⁸; (4) that the "demand for liquidity" is not affected largely by the length of time involved in investments, and by the attendant uncertainties, political as well as other.

These assumptions run counter to the definitions and the analysis of human motives upon which the present work is based. In part, at least, it is doubtful that the conditions which they rest upon can be demonstrated to be real or true. But it may be well at this point to consider briefly the nature of credit and its relation to capital.

⁷ See J. M. Keynes, *The General Theory of Employment, Interest, and Money* (1936); *A Treatise on Money* (1930); *The Economic Doctrine of John Maynard Keynes* (A Series of Papers Presented at a Symposium conducted by the National Industrial Conference Board), Natl. Indust. Confer. Bd., New York, 1938.

⁸ The idea of Keynes and others of this school seems to be that replacement funds are held idle, and thus cause unemployment.

A credit is a promise to pay in the future, given in exchange for the possession of commodities or services in the present; and one's credit is one's ability to make such an exchange.⁹

The existence of credit thus rests upon the accumulation of savings which are available for making loans to others. These loans, however, can be made only on the assumption that, by and large, the funds saved will be used for productive purposes; for, in the last analysis, the creditor is dependent upon the use which the debtor makes of the funds, and the credit is good only according to such use. Accordingly, the function of credit, insofar as capital is concerned, is to secure the productive use of capital. Its effectiveness depends upon the direction that is given to the functioning of the existing stock of capital goods. Credit is not an addition to capital, but it may give a use to that capital which already exists. The most that can be said is that the existence of lending possibilities, which the development of credit institutions affords, may even stimulate the formation of new capital.

One common confusion in thought lies in the assumption that, because credit instruments may circulate as means of settling obligations, they therefore become "money," and in that sense are capital. Now, it is true that one person may lend to another, and that the borrower may use the funds thus secured to pay a previous obligation to some third person. In this way, credits may be bandied about from one to another, as one may keep two or three balls going in the air. In other words, a demand for payment which is considered to have some probability of being met, may circulate. It may be accepted by one lender in place of another. On top of this simpler situation, we have the rise of banks, and the use of the bank's institutional credit as a means of creating notes which may circulate. Bank deposits, built upon the earning assets that lie back of the notes which business men put up with banks when securing loans, also give rise to so-called "deposit currency". Such currency, although it does not circulate freely, does serve as a sub-

⁹ An individual's ability to get credit may be considered by him as an element in his "personal capital". Few economists, however, would include personal qualities in their wealth or capital categories. Obviously, credit in the abstract is debt, and the credit is balanced by the debit.

stitute for money as a medium of exchange. It does enable individuals to secure the use of capital.

Nevertheless, notes cannot be used to pay notes, and debt cannot be used to pay debt,—not from the social point of view. Such “payments” do not reduce the total amount of notes or debt. The real basis for any payment which may be effected through credit lies in the productiveness of the capital which may be secured by the debtor, such productiveness creating the products from which, according to their value, ultimately the payment must be made.

3. Durable Consumers' Goods Are Not Capital

Some have suggested that any durable good, such as a house or a piano, which contributes “uses” directly to a consumer over a period of time, may be regarded as a capital good. The argument is that any durable good constitutes a stock or fund of “uses”, and that its value is the discounted value of future uses. It will at once be noted, however, that there is no basis for an objective value in such a case. The things called “uses” are entirely subjective and are not valued in markets, as are the products of indirect or capital goods. Thus the goods which contribute the uses, although durable, cannot be valued on the basis of such uses, when they are made available directly to the individual consumer. The market value of a capital instrument presupposes a certain, continuous income in the form of products which may be valued objectively in markets. Moreover, the significance of time with reference to a durable consumer's good differs from its significance for producers' goods. The latter, as such, are not used in gratifying wants, and their existence depends upon both a premium to reward time-preference costs and a discount on the future goods which are their products. We thus are warranted in excluding so-called “consumers' capital”—and also in part, so-called “personal capital”—from the concept of capital as used in economic science, where it is essential that the value of capital be related to the value of products.

The distinction between capital goods and durable consumers' goods receives practical significance when the two are confused in connection with business cycles, particularly if government policies

are a factor. From 1933 through 1938, in the United States, there was much discussion of the problem of "durable goods" as opposed to "consumers' goods"—an obvious cross classification. Durable goods, as opposed to non-durable goods, are likely to accumulate as inventories; since consumers who are once supplied can postpone buying, perhaps for several years. Non-durable goods, such as textiles, are likely to be worn out in a year or two, and thus have a more constant demand. But both may be consumers' goods, and thus present no direct problem of investment. Capital goods, however, represent invested savings devoted to production, and they are directly affected by money markets, labor demands, currency uncertainties, security markets, and taxes on savings. In connection with business cycles, the capital goods industries thus present a special problem.

4. Business Capital vs. "Capital Goods"

In concluding this brief discussion of the nature of capital, it may be well to present some summary observations with especial reference to the business usage of the term:

(1) Business is concerned with property rights and ownership. Therefore, it is often appropriate in business to call things the capital of a particular enterprise, because they are owned by it and are made the source of income to it. Economics, however, does not care who owns anything; nor, indeed, is it concerned directly or primarily with the existence of the institution of private property.

(2) The business man always measures his capital in terms of value, saying that it amounts to so many thousands or millions of dollars. This is true, partly because often he has only an equity in the business, and consequently it is necessary for him to treat his so-called capital as perfectly divisible. More than that, however, the business man takes the existence of interest payments for granted, and is not concerned with the problem of explaining their causes and determination. He may thus assume an interest rate, and by going through a simple mathematical process of capitalization, he arrives at an estimated valuation of his particular "capital". The economist, however, does not use value as the basis for his concept

of capital; for he sees that the value of capital goods is dependent upon this functioning, and has to be explained *at the same time* that interest is explained. To the economist, the problem of interest is vital, and to assume the value of capital would obviously be assuming the answer to the great question.

(3) The business man includes all sorts of sources of money income in his concept of capital. The economist, however, must take a social point of view, and accordingly he will consider as capital only those producers' goods which can add something *net* to the total income of society, thus eliminating such things as franchise rights, for example. The economist also considers the fundamental conditions which govern the supply of capital available for a society, and thus, on the supply side, he sees fundamental differences between capital goods and "natural resources", or "land".

(4) Land is not "a gift of Nature" to any individual. No individual has ever been given land by nature. While it remains a figure of speech, it is, however, not without a measure of truth to say that land is a gift of nature to *society*. But even to society, Nature does not give capital goods. A society whose people are not thrifty will not long enjoy the advantages of a supply of such goods.

Thus, while economists may properly refer to the value of capital goods, and may inventory such goods in terms of money, they should avoid confusing the economist's "value of capital" with business man's "capital value". The latter may be either investment funds or the net assets of a business. In the latter case, the business capital may be measured in at least three ways: (1) as assets used in the business, minus the appropriate liabilities—or, perhaps, as capital stock issued plus earned surplus; (2) as cost of investment, minus depreciation, plus additions and betterments; (3) as capitalized net earnings. The usual business approach is to regard capital as income-yielding property owned by a given concern for acquisitive purposes.

B. *Origin and Formation of Capital*

1. Abstinence

Capital has its origin in the forgoing of current consumption. Much as this fact has been disputed, its proof requires only that one ask, How much capital would there be if no one stopped short of consuming all that he produced? ¹⁰ In this sense, capital originates in abstinence.

To be sure, the results anticipated as a consequence of abstaining from consumption may outweigh the cost or disutility involved in the act of abstinence. It may be said that there is no *net* cost in such a case. Thus a saver may save cheerfully. It does not follow, however, that there is no cost. The typical individual does not desire to abstain, and does not do so merely for the sake of saving.

Moreover, while one may dwell in imagination upon some future state of security or happiness, one may also reflect on the folly of scrimping and saving now, and may even fear that one's faculties for action and enjoyment will decline in later years.

The existence of a "time preference" in the mind of the normal or typical human being is, insofar as the author knows, unquestioned. It is an axiomatic truth that most men usually estimate like units of a given good more highly in the present than in the future, assuming, of course, that capacity and facilities for consumption or use are not known to be likely to change. In part, time preference exists as a reflex tendency to act on instinctive or impulsive urges at the moment when they become effective. In part, too, it exists as a relative process, involving experience and thinking, which is concerned with the existence of uncertainty in the world—uncertainty as to business, uncertainty as to length of life, uncertainty as to weather, uncertainty as to health, uncertainty as to what not! These uncertainties are related to time, and, other things being equal, increase with the length of the time period involved. Without further discussion, therefore, it is held to be reasonable to assume that capital originates in abstinence, and that

¹⁰ Nor will it suffice to "beg" this question by so defining production that it does not include that part of the total product which is required for replacement of the capital goods!

saving is somehow or other limited by a tendency found in man to prefer to consume things now rather than in the future.

At this point, however, a question has arisen, namely: Once the abstinence has occurred, does not the thing saved continue to exist without further action on the part of the abstainer? May we not thereafter take its existence for granted? These questions suggest the possibility that that which is saved may automatically become a perpetual source of income. The answer, however, is plain enough: It seems quite possible that the thing saved may be perpetuated; but, if so, this does not occur automatically, without choice by those who may consume it, and it cannot be taken for granted. The truth is that savings exist only as long as saving goes on. They may be spent or consumed, and thus be dissipated at any time.

2. Investment

In this connection, one observes that savings, as such, are frequently not functionalized, and therefore are not capital any more than they are consumer goods. As such, mere uninvested savings are passive and have no power to reproduce themselves. They may be hoarded. More than that, they may be used for consumption loans, gambling loans, or speculation loans, and may be invested in land.¹¹ Thus they may not even be used for productive purposes. Not until they are clothed in some instrumental form, as a merchant's stock, a tool or machine, for example, or are used as "working capital", do they have the potentiality of replacing themselves; and even then they may not prove to have been "invested" wisely.

Only by assuming that "capital" (in some sense or other) automatically replaces and perpetuates itself, and that its productivity is assured, can the abstract theories of the "price economists" and some marginal-productivity thinkers evade the necessity of dealing with technological conditions and motivating "forces".

The concrete reality is that in such an economy as ours, saving

¹¹ Such loans are usually short-term and are loans of credit based on a reserve of savings. We may say that (savings — credit) = (total loans and investments + idle reserves — debt).

almost always involves saving money. Most of us get our incomes in the form of money, and it is from money incomes that we must save. In this sense, we may think of money-saving as being the soul of capital—a figure of speech which is ventured here chiefly to drive home the point that it is very far indeed from being the *body* of capital.

For, once the money has been saved, it requires an investment decision to embody the saving in some concrete capital instrument, or to employ it as “working capital”. This is required in order that the capital may become productive, and thus earn a right to exist, which earnings are, or tend to be, gross interest. Accordingly, the individual saver either forgoes his opportunity to produce some consumption good, and chooses instead to make some producers’ good, such as an implement or tool; or, having saved his money, he decides to “invest” it in some productive agency. (Of course, if he puts his money in a bank, his banker may make this decision for him, either with or without his specific choice.)

3. Waiting

Once invested, the savings become embodied in some concrete agency or instrument of production, and the problem of replacing the concrete agency arises. Or the savings may take the form of “circulating capital”, when they will function as advances to employ the labor and buy the materials required for producing a certain product or products. In addition to the protection of savings, a definite and particular replacement fund must be provided for, if the invested savings are not to be dissipated or lost. But the provision of a replacement fund requires a continuous round of savings. Each month and each year must make its pro-rata contribution to such a fund, in order to amortize the particular capital good during its life,¹² and thus maintain the principal or the sum

¹² “Circulating capital” (such as fuel, raw materials, work in process, finished goods in stock, containers, and “cash”), may be thought of as being used up in a single process or operation. There is thus practically no problem of maintenance or depreciation in the sense that there is for fixed capital goods. But a fixed amount of circulating capital must be maintained during the production of a given product under given conditions, and is invested capital.

originally saved. This process of continuous saving in order to maintain the original saving intact, is one aspect of "waiting".

Some economists have drawn a sharp distinction between "saving" and "waiting", apparently feeling that in connection with capital formation, the idea of waiting is the more important. It seems that the word "saving", as used in economics, is to be taken as denoting an act of keeping goods or money from being used up or spent, and thus involves both forgoing consumption *now*, and preserving a fund. It includes abstinence. The meaning of waiting, however, lies in its reference to the future. It implies a lapse of time—some period through which one must wait. Since the individual who waits is one who looks forward to something at the end of a period of time, it follows that one who invests is in the attitude of waiting (more or less hopefully) for a return. When, therefore, we say that the origin and formation of capital involves both abstinence and investment, it seems that we have covered the situation. Probably the best usage is to regard the term "saving" as embracing both the initial abstinence and the subsequent maintenance of the thing saved, to which investment adds the act and attitude called "waiting".

4. The Time Factor ¹³

Thus far, the fact of "time preference" and the costs of abstinence and waiting, have been discussed without any consideration of the meaning of time. Time, however, is clearly the essence in the determination of interest, and it is important as well as appropriate that its general nature and significance be treated in connection with the formation of capital.

Perhaps it is not as obvious as is usually assumed that time preference plays a special part in explaining capital and interest. Certainly, it affects not only capital but all goods, and particularly all durable goods. Whether the good is available for immediate consumption or not, we discount the mediate or postponed gratifications which are to be derived from it in the future. So, too, do we discount the products of labor or of any other factor of production,

¹³ See W. S. Jevons, *Theory of Political Economy*, 4th ed., 1911, pp. 33 ff., 61 ff.

and Professor F. W. Taussig sought to make such a discount the basis for a distinct theory of wages.¹⁴ In short, all goods, regarded as income, are in the stream of time, and their values contain a time factor.

But the stream of time is not the stream of goods. In fact, there is no reason to suppose that time affects all goods equally or in the same manner. For example, the existence of land does not depend upon time, as does the existence of capital. Neither does the existence of labor. Accordingly, land rent (and wages) exist without direct relation to time. But the time factor, through its influence upon abstinence and waiting, limits the very formation and duration of capital, and therefore has a peculiar importance for the theory of interest.

Moreover, not only does the flow of time differ from the flows of various goods or the flow of goods as a whole, but also it differs in its content or quality. *Time has a quality as well as a quantity.* We may think of it as a stream which sometimes flows over rocks, with rapids and whirlpools, and at other times smoothly and evenly. Revolutions may be likened to cataracts. No two periods of time are qualitatively the same. Particularly from the economic point of view, we stress the way in which time is associated with uncertainty and various kinds of risk. Thus different time periods—or stretches of the stream of time—are more filled with uncertainties and hazards than others.

Certainly, no factor of production is more affected by such qualitative differences in time than is capital. Between 1933 and 1939 it seemed at times that in the United States the uncertainties of the period had caused the flow of investment to dry up, and men came to talk of a strike of capital. While money rates were artificially held at abnormally low levels, the relatively high yield on corporation bonds showed how uncertain the outlook for investment was considered. Thus we may say that time preference and interest are not affected solely by the length of time—number of days or years—but perhaps as much by the *degree of uncertainty* and the hazards that confront the saver and investor. These, and the ordinary risks

¹⁴ See above, p. 509.

of the capital owner, occur in the stream of time, and, while there can be no assumption that they are uniformly spaced,¹⁵ or are discounted equally according to degree of futurity, they are necessarily associated in men's estimates with the time factor.

The foregoing reference to "men's estimates" reminds one that the meaning of time for man and his economic life, depends to no small extent upon the nature and mental attitudes of man himself. Not only does time seem more important to one man than to another, but each individual changes with time. Now he is a youth, now a mature person, now an old man; and time has a different meaning and importance in each case. His tastes change. His time preference itself changes as time flows on. For example, as the individual starts toward some object viewed as a goal, he may have the eagerness that often exists when the end is remote, or the hope that springs from inexperience or youth. As "the time draws near" when he will soon attain the object, he may possibly feel an even more intense desire; but instead he may realize that it was remoteness that lent enchantment, and that *now* his enthusiasm is gone. This will depend in large part upon what time has done to him!

One result that is of importance in theory, is the fact that interest cannot be determined by time quantity alone. Too much depends upon the time-quality factors of uncertainty and risk, and the time-preference disposition of the individual and the changes therein, to allow us to consider the interest rate as the reciprocal of the number of years during which a capital good functions. To assume the existence of pure and homogeneous time in relation to life, is to assume the impossible.

That all goods and values are affected by time, has been pointed out. With especial reference to Distribution, however, if we think of time as a stream, we may think of invested capital, or a capital good, as being like a ship which sails down stream. The crew which man the ship, are laborers. The captain who directs the ship's course, is the enterpriser. And we may think of the banks and bed

¹⁵ The assumption of a constant time factor, t , by mathematical economists is hardly warranted by any success in forecasting.

of the stream, the topography, and other natural factors, as the "land". (Incidentally, the passengers and crew are consumers, and among the ship's stores there are consumers' goods.)

Thus all factors are involved in time.¹⁶ All confront risks in the course of time. Capital, however, is the factor which is most affected by mere time—pure time—in its quantitative aspect, and especially so in the case of concrete capital goods.

C. *The Productivity of Capital*

1. **Helps Man Make Goods; Saves Labor**

From whatever angle we may view it, capital helps men to make "goods". With the aid of capital, men can make more adjustments in the materials of nature, than they could possibly make without it. As in all economic production, the first step essential to the existence of an economic product is that some material furnished by nature shall be adjusted in form, place, or time, so as to constitute it a "good"—something having utility.

Capital's function is to add to man's power to make products in this sense. It should therefore be of some interest and importance to consider briefly the different aspects of this function. These may be analyzed as follows:

(1) *Specialization of Labor and Enterprise.* The elementary function of capital was, and is, to enable labor to be specialized as such, and to function more efficiently through a system of division of labor. This it does by providing the subsistence and materials required if any individuals are to give their entire time to labor, and more especially if they are to specialize in some particular craft or industry. Usually this phase of the service of capital includes some tools and a workshop; but the bare essential is the fund devoted to production for the market.

This elementary function thus enables enterprise to function. One function of capital is to make the profits system possible.

(2) *Labor-saving.* This function is illustrated in all cases in which

¹⁶ One aspect of land is "distance", and what that means varies with the time required to cover the ground. Time and space meet in the concept of speed

man is enabled by the use of capital to make the same product with less expenditure of labor energy.

(3) *Labor-aiding*. In this case, the capital good enables labor to do things which it would otherwise not be able to accomplish at all, as for example, the use of the lever enables a man to lift a great weight; or the use of a delicate instrument enables him to do something with a degree of precision which he could not otherwise attain.

(4) Makes *extra-human energy* available: for example, "prime movers", such as engines of various kinds; also there may be noted here the devices such as stills and boilers which, through great pressure and high temperature, enable the conversion of one form of matter into another.

(5) Reduces the *limitations of space*. Transportation devices of all sorts, such as railways; and buildings which add superposed layers of floor space.

(6) Reduces the *limitations of time*. Any machine or transportation device which reduces the period of waiting between the time of the origin of a desire and the time when the object required for its fulfillment may be available.

In short, it may be said that insofar as we think of capital as contributing to the addition of utility to the materials of nature, it functions by enabling man to specialize, to utilize natural forces, to overcome the force of gravity, or to reduce friction, thus either saving labor or effectuating it.

2. Tends to Make Goods That Have Value

The foregoing point concerns only those adjustments in matter which have mere utility. Products in this sense may be increased without there being any addition to values. It remains, therefore, to explain why we may assume that the adjustments which capital makes possible, have value.

The only basis for the assumption that capital is productive of values, is the assumption that men are ordinarily rational in their use of capital instruments. We must assume that capital will be used (a) to make things that are both scarce and desired, and (b) to

make things that are desired more than the cost of making them—that is, things which are worth while. This involves the corollary that ordinarily capital will not be used to make things which are not considered to be worth while.

This assumption, it will be noted, is a reasonable one as long as we make the further assumption that production is carried on under a system of individual initiative, and that individuals who direct the use of capital usually act with reasonable regard for the social point of view. This is the significance of the function of the enterpriser. As we shall see, it is his function to determine what it is worth while to do, and this includes the direction of the use of capital.

D. The Definition of Interest

Interest, as the term is generally used in economic science, is that share in the social income which is attributable to capital as such, and which tends to equal the value of the services of capital goods.¹⁷

I. Does Not Require Payment or Private Property

In presenting this definition which, it will be noted, is in the same form as that given for wages, it is first desirable to stress the point that interest is not a "payment for the use of capital". In other words, it is not "contractual interest". This point is perhaps of especial importance in the case of interest, for it is here that we find the individual point of view most abused. The reasons for rejecting it are as follows:

(a) The use of some capital is not "paid for" in the sense that a price is paid by one individual to another. In fact, a great deal of capital is used by the owner. Thus the concept of interest as a payment for the use of capital, is too narrow.

(b) Interest would exist if there were no property rights, and if there were no payments made for the use of capital. Being the result of the functioning of capital goods, it would exist whenever and wherever such goods perform their functions and thus con-

¹⁷ The term is more loosely used to cover "loan interest", and "money rates", as well as "imputed" interest

tribute to production in the social sense. Any definition which makes the economic factors and functions depend upon property rights, is to that extent superficial and unscientific.

(c) The concept of interest as a payment for the use of capital tends to remove from consideration the fundamental problems of the cost of capital, and the utility of the products attributable to capital. It is usually associated with an assumption that capital goods exist, and that they have value, thus leaving the return to capital as a matter of the more or less fortuitous circumstances which affect bargaining power.

(d) Interest as a payment for the use of loanable funds would include short-term borrowings for consumption, gambling, and speculation. There would be no necessary connection with production.

Another point to be noted in connection with the definition of interest, is that it is to be kept rigidly separate in thought from the concept of a *rate* or percentage. The mind is apt to leap at once to the idea of "the interest rate". While the rate of interest in a given market may be thought of as a conventionalized price of the use of funds or capital, however, a moment's consideration shows that such a rate is a ratio between two sums, both of which require explanation. It can be arrived at only after (1) the interest *share*, and (2) the value of the capital goods, have both been determined.

2. The Specific Product

The concept of interest which it is expedient to use in economics as a social science, regards the share of capital as being dependent upon what capital adds to the products which it helps to make. Here the question arises, Should we consider that product as being the one which arises from the most productive proportion among the factors of production, or should we consider it as the product which arises under the actual circumstances existing at any given time? If we consider interest as the product of capital under conditions which give the most productive proportion among the factors of production, we may say that we are thinking of "normal interest"; or we might call it the full economic interest. If, however,

we are considering the product of capital under some proportion among the factors of production which is different from that which would be the most productive, we are dealing with a problem which concerns the interest that is actually earned, which may be called market interest. (Contractual interest tends to equal market interest.)

Market interest, as thus defined, is not to be thought of as something qualitatively different from normal interest. It is still a share in the social income; it is still attributable to capital; it still *tends* to equal the value of the service of capital. In short, it is outside the province of economics to consider payments made for the use of capital which are not motivated by economic considerations. The idea is to test social productivity, so that exploitation and waste may be distinguished. Economists simply recognize that ignorance, mistaken calculations, and immobilities, may counteract the tendencies which are working to establish the most productive proportion among the factors, for longer or shorter periods of time, and that therefore the interest actually earned may be different from the normal economic interest. It may be either greater or smaller.

The essential problem, however, is to determine the normal economic interest. It is this interest which represents the equilibrium levels toward which, to the extent that economic motivation prevails, market interest payments are tending. It is this which represents the test of economic efficiency and provides the basis for judging when the most productive use of capital is attained.

3. Gross Interest

The foregoing definition is all the more important in that we are to deal primarily with *gross* interest, as distinguished from net interest, or what is sometimes called "pure interest". The term, interest, will here be used as the return on invested capital or concrete capital goods, and since such goods have a characteristic physical form and life span, there is necessarily involved a problem of "replacement". Moreover, invested funds need not be reinvested, but may go into short loans, productive or non-productive. Thus "gross

interest", as the term is here used, includes not only the product of and reward for abstinence and waiting, but also the income required if the concrete capital goods in which the savings are invested, are to be replaced.¹⁸ It does not include interest payments made for consumption and speculation loans, or on investments in land.

Doubtless, one reason why some economists have leaned toward the concept of net interest, is to be found in their failure to keep land and capital goods separate. Land, as it seems expedient to define it—and as the term is here used—requires no replacement, in the sense that capital goods do; and the essential attributes of land cannot be produced or replaced.

It follows, too, that we must take a position concerning the concept of "pure interest". Those who emphasize purity, do so because they accept some narrow theory of interest which does not explain all of the product of capital. Accordingly, they define "pure" interest so that it fits their definitions. For example, those who hold an *agio* theory (making interest a premium on time preference) insist that only a bare payment for time belongs in pure interest, and that no allowance for the element of risk or supervision that may be involved in loans or investments, should be included. Other psychological theories may limit "purity" to the productivity imputed to bare saving, as such. Similarly, those "price economists" who take the existence and value of capital goods for granted, think that "pure" interest should include only payments for the use or "services" of capital, without any allowance for replacement, thus assuming a sort of stationary state.

The fact, however, is that the existence and functioning of capital as an instrument of production, require abstinence, saving, investing, waiting; and these acts, in turn, involve supervision, replacement or amortization, and risk of both non-payment of interest and loss of principal. Accordingly, interest, as a distributive share that is related to production, must and does tend to cover all of these requirements.

Thus we frankly approach the problem of interest as being that

¹⁸ Cf. above, pp. 447f. (Marshall's net income idea).

of determining the *normal gross interest*, in the shape of the total specific product of capital goods, making the assumption that this product tends to be what would result from the most productive proportion among the factors of production. This, of course, involves the proportion between the labor and other factors engaged in producing capital goods, as opposed to the labor and other factors engaged in producing consumers' goods.

E. *Leading Interest Theories*

Before attacking independently the problem presented by the determination of interest, one should consider the chief attempts that have been made in the past. This is done here, not with the idea of presenting any complete sketch of historical developments, but to indicate the main lines that other thinkers have pursued. They appear to be as follows:

1. **Productivity and Use Theories**

One type of theory is characterized by its emphasis of the utility of the product, while ignoring disutility costs. Some of the theories under this head have been quite crude, even going so far as to assume the value of the product, and the value of the capital good, as if the two values existed separately. Without discussing such naïve thought, we note that the highest development is attained in the "marginal productivity theory" of interest, such as that expounded by J. B. Clark and some members of the Austrian School. Such a theory undertakes to explain the product of capital, and through the product, the interest. This is done by a process of imputation, ascribing to capital the changes in product which accompany an incremental change in capital.

Such reasoning is one-sided and lacking in completeness, in that it does not explain the limitations of production, or the location of any margin of production. Perhaps its fundamental weakness is that it assumes the existence and perpetual service of capital, and thus prevents us from knowing why any particular quantity of capital is used rather than a larger or a smaller quantity. It is not sufficient to answer that it would not "pay" to use more capital;

for the theory does not explain why capital may not be very cheap or even free. Consequently, those who hold such a theory are consciously or unconsciously driven to assume the existence of a stationary state of society in which the capital equipment is neither increasing nor decreasing.¹⁹

2. Cost Theories

The chief type of cost theory is that which explains interest as being a reward for abstinence, the latter being thought of as saving, or a mere forgoing of the use of products for current consumption. Some thinkers, however, have suggested that in addition to any abstinence cost, there may be an important element of waiting cost. This would involve time preference, considered as a psychological factor which causes aversion to the delay involved in round-about methods of production. In either case, interest is regarded as a reward necessary to induce men to abstain, or to wait, or both.

If interest is a reward for sacrifice made, the cost must be considered as a matter of psychology, and may operate directly upon interest by affecting the charges that savers or waiters will make for their services. There are some, however, who argue that the effect of cost is not exercised directly upon interest, but only indirectly and through the limitation on the physical supply of products. If the cost be thought of merely as restricting the amount of saving or waiting that will be performed, and thus reducing the quantity supply of capital and the products of capital, the thinker may be able to evade the discussion of subjective valuations, at least on the supply side, though only by refusing to accept the scientific duty of explaining the conditions essential to the existence of the phenomenon under consideration.

The general objection to cost theories is that they do not explain the source from which the reward or payment can be made. They lack an explanation of the demand for capital. Cost alone cannot give capital value, any more than it can give labor value.

¹⁹ So with J. B. Clark (*Distribution of Wealth*) and F. H. Knight, "Ricardian Theory of Production and Distribution", *Canadian Journal of Economic and Political Science*, Vol. I, pp. 9-16.

3. Demand-and-Supply Theories

For lack of a better term, we may lump together under this head various ideas about the determination of interest, some of which are good and satisfactory, while others are not. The equilibrium school of thought in general holds that the quantity supply of capital goods is created out of the materials of nature by the expenditure of human energy, and that this supply is therefore limited by cost. On the other hand, the demand is regarded as derived from the product, and as dependent, in the last analysis, upon human desires for products to which the capital contributes.

An excellent illustration of this type of theory is that presented by Professor T. N. Carver in *The Distribution of Wealth*. Carver says there are two questions: Why is there any income available for capital? Why is there more income available than what would be sufficient to maintain the capital? The first question, he answers by stating that productivity exists in capital goods, in the sense that particular instruments may be used in such proportions with other agents of production that the additions to products which result from their use will seem worth while to enterprisers. The second question, he answers by referring to cost, asking why capital goods are not multiplied to such an extent that they become free? The cost of making the instrument, and the cost of waiting for the results which it gives over a period of time, are the conditions which prevent such multiplication. These costs of waiting have to do with time preference and with the risks or uncertainties which affect waiting. Thus Carver harmonizes the productivity and the cost theory.

Under the head of demand and supply, we may also mention the notion that interest is determined by bargaining power.

The chief shortcomings of this sort of theory have usually been its emphasis of property rights, money payments, and, in general, the entrepreneur point of view.

4. Psychological Theories

The psychological theories of interest, so to call them, all center in the idea of a time preference, which leads to "discounting" future goods or to a preference for present goods. This condition of preference vs. discount, gives rise to an "agio", and such theories are sometimes called agio theories. A similar idea is suggested by Professor Irving Fisher, who calls his theory an impatience theory. One should briefly consider Professor Fisher's version.

The central point is the rate of impatience, which is our old friend, time preference, considered as existing in different degrees. For example, Fisher assumes some figures, such as the following: A man is said to be willing to give \$100 now, if he can get \$104 in one year from now. His rate of "impatience" is obviously 4 per cent. In the last analysis, we find that the explanation of these two figures, 100 and 104, is vital to the theory. But, while Fisher undertakes to explain the rate, his explanations either take him far beyond the idea of a mere rate of impatience as expressed in the difference between 100 and 104, or they do not explain anything. Thus he says that there are differences in "income streams" with respect to size, time, shape, and certainty. He also points out that there are differences in individual character which result in differences in foresight, self-control, habits of thrift, and uncertainty of life. He even goes on to refer somewhat to industrial technique. But he does not go beyond these things, and he does not explain them. He takes them for granted.

Why, then, does he introduce them at all? Analysis shows that they are introduced merely to provide a basis for alternatives, or opportunity cost. Thus he talks about "investment opportunity"; but wherein lies the "opportunity"?²⁰ What is the explanation as to the source and certainty of the product? For example, how can it be assumed that the value will be greater one year hence?

²⁰ It may be adequate for the purposes of mathematics to assume alternative combinations of figures, and that "other things remain equal"; but this will not do for the scientist. The final alternative is product or no product (or capital or no capital). Moreover, where human motives are concerned, other things do not remain equal.

Whence comes the productivity? Why is the figure 104 taken? As to income streams, what determines the differences in size and shape? Again, we find that the origin of income in productivity is not explained.

Finally, it may be asked, What is there to prevent the rate of impatience, or the rate of interest, from falling to zero? In answer, we find references to such things as self-control, uncertainty, and the like. Self-control and uncertainty, however, imply sacrifice. They are the bases for costs incurred by individuals. The aversion to confronting uncertainty, and the difficulty of controlling oneself, are exactly the things which limit abstinence, saving, and waiting. Then, saving and investment being limited, we find the supply of capital goods likewise limited, and accordingly the stream of products, which is the "income stream" of which Professor Fisher talks so much.

One can no more explain interest by referring to purely subjective phenomena than one can explain value in terms of utility, or the universe in terms of mind.

Perhaps this is the reason for certain theories which, while based upon predominantly psychological premises, develop some discussion of what Böhm Bawerk calls the round-about process. Böhm Bawerk, for example, says that the technique of the round-about process is or may be more productive than direct methods of production. He appears to mean that labor, in making consumers' goods, such as bread, is less productive than labor which is applied to making producers' goods such as ovens. But this assumes the element of productivity, and thus becomes a "productivity theory" of the type already discussed. By ignoring important elements of cost which affect the supply of producers' goods, he is able to take for granted the quantity of such goods and the attitudes and motivation of those who produce them. In reality, his theory therefore breaks down into one which merely describes a process of "ripening", in which "future goods" ripen into present goods; and interest is thus described as the difference between the value of present goods and future goods. This leaves us about where Professor Fisher does. (Indeed, Irving Fisher and Frank A. Fetter, respectively, have built

their impatience and time-preference theories of interest upon Böhm Bawerk's thought.)

5. "Dynamic" Theories

Professor Schumpeter regards interest as existing only when new inventions and changing business methods occur.²¹ In this sense, he appears to treat interest as a result of dynamic changes in economic life. For example, an enterpriser borrows funds to make improvements in his business, and is thus enabled to pay interest out of a surplus made available by the improvement. In a "static state", according to this explanation, interest would not exist. This attack on the problem seems to confuse capital and enterprise, implying at least that the two are logically inseparable. Moreover, it does not explain why there should be any limit to the use of capital.

6. Exploitation Theories

Finally, there are those who see interest as a predatory share. Their theories represent variations of the theme for which Karl Marx is well known, namely that all values are produced by laborers; while capitalists, with the aid of the institution of private property, are able to exploit them, the measure of their exploitation being interest (usually called "profits" by the older writers).

F. *The Determination of Interest*

Since even a brief examination of the main types of interest theory gives such unsatisfactory results, it may well be concluded that no one-sided attempt to explain the phenomenon can arrive at the truth. Therefore, we shall abandon the notion of either a purely subjective or a purely material explanation of interest.

The first essential is to recognize that the technological aspect of capital goods is important. Such goods contribute to desirable physical manipulations of matter, and they embody or clothe (are "invested with") human labor and human savings. We shall also recognize the fact that capital goods involve the costs which attend

²¹ See J. A. Schumpeter, *The Theory of Economic Development* (1934), Chap. V.

waiting by those whose savings are "invested" therein. Finally, we shall consider capital goods as contributing to the product, both by adding to the quantity of objects which are desired, and by doing so in a way which affects the motivation of those who make them. By technical "efficiency", capital goods make possible the existence of new things and increased quantities of old things which may be desired by man. They also affect cost, and may reduce it.

Thus the concept of "capital-efficiency units" becomes possible. It is not a simple concept, for the service of capital has both positive and negative, or active and passive, sides. We may think of capital-efficiency units as being either energy-producing or energy-saving. From the economic point of view, however, which always is that of net value, or equilibrium between cost and utility, this difference in the way in which capital goods function is not significant.

1. An Isolated Individual

As a first approach to the problem of determining interest, it will, as usual, be found illuminating to consider an abstract, simple case. Such an approach assumes an isolated individual endeavoring to make a living with the aid of a fish net, as Robinson Crusoe might have done. In this case, the problem is to ascertain by reflection what forces must motivate the individual, both in impelling him to make a fish net and in limiting his activities in that direction.

The demand of such an individual, if we may speak of demand in this case, arises from his desire for fish. He is hungry; he sees water, and fish therein. The thought of a net occurs to him, and hence his determination to make the net. The basis for his motivation is thus an organic want. The resulting desire is made effective by his energy and skill in procuring the materials for the net, and in fashioning them into the requisite form.

But is that all? Obviously not; for in this case, it will take more than labor to catch fish. The very reason for making the net is to have something which aids labor. In short, capital efficiency must be added to labor power, and it is that necessity which drives

he individual to use the time and energy which are required to produce the net, instead of applying them to more direct means of procuring food, or merely enjoying rest or diversion.

Obviously, the desire for fish is the basis for the desire for the fish net. It must be noted, however, that since a part of the desire for the fish could be gratified directly by other means than the net, the desire for the net is not as simple as the desire for fish. For example, with great labor, some fish might be caught without any such appliance. Obviously, the valuation in the mind of the individual may be regarded as dependent upon the extent to which the net will contribute to or increase the supply of fish. Accordingly, only a part of the desire for fish is imputed to the net. Thus we may speak of labor-power and capital-efficiency as being rival claimants to an importance which depends upon his valuation of fish. Clearly, he will ascribe to the net that part of his desire for fish which represents the relative efficiency²² of the net in comparison with direct labor—that is, labor alone.

At the same time, it will be noted, too, that what may be called the purchasing power of the net is determined by the labor it saves, or the worthwhile product which it adds to a given amount of labor. It is by contributing to the quantity of fish made available to the point where marginal utility or subjective worth falls to zero—that the individual's desire for the fish becomes a demand for fish nets. The fish net creates its own purchasing power in the shape of added product.

We have already begun to touch upon the question of supply. Proceeding further along this line, we come first to the fact that there is an element of labor energy required in the construction of the net. This may be tedious and difficult work, which the individual will not willingly undertake. It exhausts energy, and may lead to an aversion to the labor that is involved.

²² "Efficiency" is here used broadly to cover all aspects of the individual's choice which involves the relation between means and end in the sense of physical cause and effect, as these terms are used by careful scientists. Along with this relation, of course, go a balancing of various positive and negative desires. But we do not include the possible pride in artistic workmanship, or interest in the mere mechanical operations. Nor do we include the healthfulness or educational value of the alternative processes.

More than this, there is an element of labor energy expenditure involved in the use of the net. For example, our Crusoe may have to crouch in a difficult position, or enter rough or swift-flowing water, or otherwise go to much trouble and discomfort.

Finally, on the supply side there are other elements, without which the net could not come into existence, and without which it would soon pass out of existence. Among these, there is the element of forgoing or abstinence. Whether it be forgoing leisure, or forgoing berries, or forgoing a fish that might be caught *now* by hand, some sacrifice of this sort is involved. Then there is the element of waiting. The net will make available more fish, but only in the future. The labor of making the net and the forgoing of other products, however, are *now*—in the present. Thus the question, How long, is important. Finally, there is the factor of uncertainty. As our Crusoe works on his net, he is smitten with doubts as to whether his net will be effective. Can he catch any fish with it at all? If so, how long will it last? In short, will the total number of fish caught by its aid be sufficient to make his labor and abstinence worth while?

Thus various conflicting tendencies enter into the motivation of the individual, and we may find him balancing certain supply intensities in his mind, namely, labor costs and costs of abstinence and waiting. Upon the relative intensities of these, largely depends the course which he will take.

Finally, we come to the reward for the efforts and sacrifices, in the shape of a fish. We have certain product units which, for simplicity's sake, we may think of as measured in numbers of fish. In the catching of each fish, however, there is involved a number of capital-efficiency units. These are the units which have made it possible to have more fish in proportion to cost. They are thus potential fish, and when they are realized in actual fish, they are in a sense embodied in the product. To the extent that the fish products depend upon them, they are the cause, and *caught* fish are the result.

It remains to note that the foregoing simple illustration throws light on the relation between the product and the *purchasing*

power of the laborer-capitalist who has been under discussion. Obviously, to the extent that he pays for the fish with his labor energy, he is enabled to do so by consuming the fish, which restore the labor energy. Just as obviously, however, our laborer-capitalist pays for the fish, in part, by the abstinence and waiting which he undergoes in order that the net may come into existence and function as an instrument. The proportion of capital-efficiency units which enter into the product along with labor-efficiency units, has something to do with determining how much of the individual's desire for fish will be imputed to the fish net. And the effectiveness of the net in adding to the number of fish caught, has a great deal to do with the valuation which the individual attaches to the net. Thus his valuation is determined not only by the supply intensities referred to above, but also by various material and technical conditions which determine whether the nature of the water, the fish, and the man, are such that the net will function effectively.

2. Determination of Interest in a Capitalistic Society

In order to make a realistic approach to the problem of determining interest, it will now be well to consider the matter as it might be confronted by the board of directors of a twentieth century corporation, say a shoe manufacturing company. The desirability of increasing the capacity of the corporation having arisen, the board finds itself necessarily dealing with three main questions, which we may call the ABC of interest:

A. What can the shoe manufacturing industry, as represented by this particular corporation, afford to pay? What are the earnings prospects? This question involves the economist's "marginal productivity". It concerns the market for the proposed product, shoes. Its answer decides what the demand will be for capital goods, say shoe machinery, and for the funds which will have to be raised by an issue of bonds.

B. How much will the particular corporation in the given industry, shoe manufacturing, have to pay for the funds it requires in order to purchase the desired capital goods, shoe machinery? What return will attract investors and lead to the most advan-

tageous sale of the proposed bond issue? This is the pecuniary side of the problem. It involves the economist's treatment of abstinence and saving—of course, on the investor's side. It concerns the supply of uninvested funds in the money market.

C. How much will the particular corporation in the given industry (shoe manufacturing) have to pay for the concrete capital goods (shoe machinery) it requires? What will be the "cost of investment"? Here we find ourselves considering the economist's discussion of investment, replacement, and costs of waiting. Technological aspects of capital goods are involved.

A little reflection concerning the complex situation thus briefly analyzed shows that several complexities affect the determination of interest in what we may call the modern money-and-credit economy. The demand for capital goods generally involves an immediate demand for liquid or loanable funds. "Investors" hold these loanable funds, but desire to put them to productive use so that interest may be earned. Thus, in addition to the problem of what the industry *can* pay, is the problem as to what it will have to pay, to induce investors to invest. At once, the board of directors of our shoe manufacturing company is reminded that the "cost of money" is a serious consideration. Then they turn to the possibility of getting the desired items of plant and equipment as cheaply as possible. In other words, the cost of investment arises as a problem, and here they are concerned with the supply prices of particular capital goods. The technological aspects of the situation thus become important, and doubtless the engineering department is called upon for details as to technical efficiency, before a decision is reached.

It is in some such setting as the foregoing that we approach the analysis of demand-and-supply conditions affecting the determination of interest in a society.

(1) *The Demand for Capital.* Remembering that, as usual, demand is here discussed in the sense of demand intensity, we note first that the demand for capital is joint. The demand comes from a product to which capital contributes, and that product is a joint product resulting from the combined functioning of labor, land,

capital, and enterprise. The physical adjustments which give the good its form or other physical characteristics, are a matter of the land-material which it contains, and of the technical efficiencies of the forces which have worked upon the material. Then the value of the product per unit depends upon (1) the intensity of the demand of the buyers and (2) the intensity of the supply resistances of the sellers who hold the product at a given time, back of which lie the resistances of those who provide the agents of production.

Thus the demand for capital, being derived from a joint product, comes into existence in connection with a due recognition of the dependence of the product upon the joint functioning of the several factors of production. We may say that the demand for capital depends upon the following:

(a) The demand schedule for the product. (This affects the demand for all factors of production, and may affect them equally.)

(b) The proportion of the product which is attributable to capital-efficiency; or in other words, the relative importance attached by enterprise to the services of capital as compared with labor, land, or its own service (enterprise). (If the demand price of the product remains unchanged, the use of more labor will probably mean the use of less capital.)

It is practically impossible to discuss all these different factors or agents of production at the same time, and thus far only the labor factor has been considered. The reason for beginning with it is two-fold: It is one of the primary factors, and from the point of view of social science may probably be considered as *the* primary factor; certainly, in modern society, it has a prior claim to share in the product. Again, the costs undergone by laborers are the most obvious of all costs, and historically their nature and connection with productivity are least subject to dispute. Now we take up the discussion of capital and interest, because, first, the quantity of capital goods depends partly upon labor. It depends largely upon the proportion of the labor energy of a society which is directed toward the production of capital goods as distinguished from consumers' goods. (For example, high wages tend to cause a reduced use of direct labor and an increased use of capital goods, and that

means that the labor army of the society or nation is directed into the production of capital goods, where it is likely to be employed until capital-producing labor is able to earn less than by turning to more direct means of producing consumers' goods.) In the second place, the supply price of capital goods obviously depends partly upon the wages of the laborers who help to produce such goods.

If now, we accept the general conclusion that demand for the services of capital is the demand for the product to which capital contributes, minus such amounts as are necessary to induce the other agents of production to function, we come face to face with the question, What, then, determines these amounts?

At this point, much confusion of thought has existed almost from the beginning of economics as a science. The tendency has been to regard the question as unanswerable, and even when this attitude is not consciously taken, the answer is avoided by the simple device of treating the share of each factor of production separately, both in chapter and in logic. Sometimes the difficulty is met by a resort to ethics, which leads the economist to say what labor or capital "ought" to get. In other cases, there is a virtually agnostic attitude which finds expression in the thought of some who hold so-called "bargain theories" of wages.²⁸ This is akin to the residual-claimant idea, and of course provides no explanation of the determination of the several shares.

First, we note that the demand for capital is not a mere residuum. The contrary might be inferred from the preceding statements; but it is not to be forgotten that *capital puts in its claim for services at the same time that the other agents put in their claims*. The claims of the several factors are made jointly.

Second, we note the great importance of determining the conditions upon which the settlement of these claims depends. These are not new; for they are the same as those which have already been stated in connection with the determination of the value of the labor service. They may be restated briefly, however, as follows:

²⁸ Of course, if the theory regards the bargaining as subject to definite limiting conditions and governed by "forces", this observation does not apply. But in such cases, one may ask, is the theory really a "bargain theory"?

To begin with, there are the physical requirements which arise from the nature of the material, the process, and the product. For example, there is no way to avoid the use of a large proportion of capital in case the object is to secure a large yield of gasoline from crude petroleum, for this requires the "cracking process". In the second place, there is the relative abundance or degree of scarcity of the several agents which, it will be remembered, is to be kept separate from the idea of their costs. This factor of relative abundance is to be thought of as measured in terms of technical efficiency, so that we consider the abundance of the several factors as potentials for making adjustments in the materials of nature. Finally, there is the question of supply prices which are, as it were, attached to the several agents by those who supply them, such supply prices being largely the result of human costs, or subjective values. If, for example, the labor in an industry is organized and demands high wages, the demand for capital may be reduced, at least temporarily; then it may be increased through a tendency to substitute capital for labor; and finally, through an increase in the expense of producing the capital, there may be repercussions tending to make the demand less than otherwise.

The foregoing, then, are the elements that enter into the determination of the relative importance which the use of capital will have to an enterpriser in connection with a given product. If capital be thought of as one of several factors which condition the creation of some "product", one determinant of the demand for it is the proportion in which it will seem to be required at any given time, along with other factors. (Of course, the other determinant lies in the intensity and breadth of the demand for the product itself, which is a matter that is independent of the combining proportions of the factors of production.)

Then, aside from the simultaneous nature of the process by which the services of the several factors are valued, there are certain other conditions which make a non-circular solution possible. Upon the validity and importance of these points, largely depends the validity and importance of the theory here presented. They are as follows:

It is not the *value* of the joint product which is to be imputed to the several factors of production; it is the *demand* for the product. The demand for the product must exist before the product can acquire objective value. Moreover, such value comes into existence only after the various resistances to production, which characterize the several factors of production, become known through the offers or supply prices which are made by those who supply those factors.

It is highly important, furthermore, to note that, while the demand for the services of the several factors is joint, the supply of those factors is not joint; and that *on the supply side* we find ample basis for a partial determination of the several shares in Distribution. It is here that the importance of technological considerations again appears, involving questions both as to the industrial technique and the physical abundance of the several agents. Then, too, the valuations of those who supply the services of the several factors are affected separately by the different supply considerations that characterize each one, labor costs, capital costs and enterprise costs being distinct and different, and land costs non-existent.

Most of the theoretical hopelessness concerning the possibility of the causal determination of the shares in Distribution exists among those economists who ignore technological and psychological conditions. Some insist that goods and their several scarcities and differences, are to be taken for granted, without discussion or attempt to relate them to economic problems. Others insist that it is impossible to deal with human motives. Still others insist, either that there are no disutility costs or that they are unknowable. An earmark of this level of economic theorizing appears in the tendency to treat the several factors of production as if they were one and the same, the most common resort being to reduce land and capital to terms of an abstract fund.²⁴

Aside from the foregoing bases for a logically separable determination of the several shares in Distribution, there is also the phe-

²⁴ In this connection, it is interesting to observe that the problem of definition is really one of major and fundamental importance. This is realized the moment one accepts the conclusion that it is necessary to deal with technological differences and human motives.

nomenon of the subjective prices which those who furnish the services of the several agencies put upon them. The "offer," or the "supply-price," of each of the services ("power" and "efficiency" units) exists without any direct relation to the value of the product or to the values of the other services. The offer or supply price of each of the factor services has a definite base in the conditions which determine the motivation of those who supply it, and which direct the functioning of the factors.

(c) There remains, however, one peculiarity on the demand side of capital. This is the *factor of uncertainty, which is involved in the passage of time*. Enterprisers cannot get the services of capital unless they are able to offer some assurance that the invested capital will replace itself, with something over for net interest; and they will not bid for capital without calculating what the chances are in this respect. Capital goods in all cases represent the "tying up" of labor and savings in some material form. This material form, whether it be a machine or a building, has a life period; it lasts for a certain time, when it must be replaced. The prospect of getting one's investment back is a matter of importance according to the *length of the life period* of the instruments in which one's savings are invested. For example, if the capital good is of the variety called "fixed capital," the life period is relatively long, and any element of uncertainty which may exist finds such an investment peculiarly sensitive. If the "business outlook" is cloudy, then there will be little demand for such investments as keep one's funds tied up for a long period. When there is fear of inflation or of political interference with business, it is this kind of capital which is most affected, and it was under such conditions that in 1933-37 we found the "capital goods industries" depressed, with great unemployment resulting.

Incidentally, it is in this connection that we note the existence of what Marshall has well called "quasi-rents". It is the existence of fixed capital, which lasts during a period of years and thus becomes "old capital", that is the basis for most differentials on capital goods. Having tied up his funds in a given kind of plant or equipment, the investor may hesitate to scrap it when it becomes obso-

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lete, even if that were possible, and as a result, newer forms of plant and equipment may show greater efficiency, and earn a differential return. As long as the differential exists, it is as truly a rent as is the land differential.

(2) *The Supply Intensity of Capital.* Again noting that the problems connected with the supply of capital are here approached from the standpoint of the supply intensity, or the "supply price" of capital goods, we first observe that, so considered, the supply depends primarily upon the tendencies and motivation of investors, and upon the cost of producing such goods. Since the general nature and origin of capital goods have already been discussed, we may at once take up the elements which enter into the costs that are involved. These are as follows:

(a) *Cost of abstinence and saving.* In a modern exchange economy, this cost has its effect upon the supply of "loanable funds"—that is, money and credit instruments which represent uninvested or liquid funds. The cost of saving is a matter of time preference. The typical individual prefers a given good now rather than at some future time; and if he forgoes its consumption now, he undergoes disutility or dissatisfaction. If he is to be induced to abstain and save, *his positive desire for the security or gain or prestige that are associated with saving, must be strong enough to overcome his "propensity" to spend and his negative desires or aversions as to bearing risks and making investment decisions.* (This same idea might be referred to under the head of the technical superiority of present goods.)

The cost of saving is not an absolute factor, independent of time and place. It varies with the education of the individual, his love of posterity, the distribution of wealth, the customs that prevail in his social environment, the security which his government affords, and many other circumstances. These affect his tendency to save, or his desire-disposition as to saving. When all has been said, however, the factors which determine the intensity of the costs of abstinence and saving, are those which bear upon the degree of time preference as it affects individuals; and these factors will be found to sum up under the following heads:

Degree of futurity, or length of time;
 Degree of certainty; and
 The character of the saver.²⁵

It is of practical importance to recall that saving plays two parts, and that the cost of saving has two aspects. There is not only the original decision or series of decisions to "abstain" from current consumption in order to accumulate a fund that will enable the capital good to be produced; but there is also a continuing process of forgoing consumption of the products of the capital goods or the income therefrom. If the process of capital formation is to be regarded as self-sustaining, the saver, having invested in capital goods, must abstain from consuming the products, or "using the income," until he is in a position to replace the capital that was originally saved.²⁶

(b) *Saving not directly related to cost; unconscious or surplus saving.* Some saving is done without cost, or at a cost which bears no relation to the amount of the saving. Some of the chief types of this saving are the following. People of great wealth may save, in the sense of accumulating funds for which they have no "use", and they may do so without any sacrifice. Any individual may come to save through habit. Corporations may accumulate surplus funds, which is a sort of saving, without any particular individual realizing that he is making a sacrifice. Finally, the government may accumulate surplus funds from taxation or other sources; and, while some taxpayer may have made a sacrifice, even this is not necessarily true. In any case, the sacrifice would have no direct connection with the amount of saving. This kind of saving, not being directly motivated by individual desires, is not affected by cost. Indeed, it is conceivable that it may reduce the cost of saving in the society in which it is practiced; but only by increasing the total amount of savings in existence as compared with the desires for the use of

²⁵ Cf. above, pp. 573ff., where the time factor is discussed.

²⁶ Again, it is to be noted that if the funds saved are not invested, but are merely "loaned" on a short-term basis to needy consumers or for other non-productive purposes, there is no problem of replacement—just as there is no problem of depreciation. The lender seeks to maintain his principal by looking to the "security" or "collateral" (given by the borrower), to which he has a legal claim.

such savings, thus lowering the marginal productivity of their use.

Obviously, there is especial danger that savings of this description may be misdirected. In the case of a corporate surplus, for example, there is a distinct possibility in some cases that the funds thus accumulated may be used to further monopoly, or at least may decrease the sense of responsibility of the corporate directors for the economical management of their company. Similarly, the enforced "savings" which a government may accumulate, are apt to be wasted by politicians, or used for sinister political purposes.

(c) *Cost of investing.* When an individual has saved, or has otherwise become possessed of a supply of "loanable funds", there arises in his mind the question, What shall be done with them? In other words, various motivating conditions and tendencies affect him. It is not a foregone conclusion that the savings will become embodied in some form of capital goods. They may remain idle. They may be used for consumption. They may be used for speculation. They may be used for "investment" in land. Only if they are invested in capital goods, however, are the loanable funds embodied capital.²⁷

The decision which is required in making an investment is, no doubt, an essential part of capital formation. This involves the will to invest,²⁸ and it also involves a choice among investments. Having saved, the first question which confronts the individual is whether to invest or not; for one may merely hoard. In this elementary aspect of investment, uncertainty is an important factor, as is illustrated by the fact that a high degree of it is apt to be accompanied by much hoarding and little investment.

Thus the investment decision is a function of the capitalist as an investor, and it is a most important function, since it plays a large part in directing the flow of loanable funds. It is not, however, to be confused with enterprise; for it is concerned only with the security of the capital during the term of the investment, the

²⁷ Includes devoting funds to some particular means of production, in a way designed to add something to product that is not attributable to labor, enterprise, or land.

²⁸ This may be compared with the will to buy a consumers' good. See above, p. 247f.

interest paid on the capital, and the liquidity, or possibility of withdrawing the individual's fund from the particular form of investment—of disembodimenting it. The saver, as an investor, chooses among investment opportunities as presented to him by enterprise. His choice is guided by considerations of yield and safety, confidence in "the management" of the enterprise being one factor; and his claim to interest is a claim upon the proceeds of the business that is prior to the claim of the enterpriser to profits.

In this connection, we note that there is a distinct factor of *capital risk* involved in the ownership of capital, particularly after it has been tied up in concrete capital goods operated by some business enterprise. This is not "business risk" in any ordinary sense of the term; it is not the risk borne by the enterpriser.²⁹ It is a capital risk. If the enterprise fails, it may not be able to pay interest. The value of its assets may be found insufficient to return to the investors the equivalent of the funds which they invested. A dishonest borrower may defraud the lender. The state may use political power to tax or devalue or expropriate so as to deprive the saver of his savings. To the extent that such risks cannot be provided against, they must be borne by the investing capitalist.

In addition to the foregoing elements—the investment decision and the capital risk—there is also a factor of *investment supervision*. This depends somewhat upon the terms of the loan that is involved. But in most cases the investor has to keep informed concerning the factors bearing upon the safety and earnings of his capital, with the idea that some change in the disposition of his funds may become desirable.

Probably, among the items which fall under the head of investment cost, the one most discussed by economic theorists is the *cost of waiting*. The typical investor is ever in the attitude of looking forward with hope or fear to the results of his investment. Thus uncertainty has one of its several effects. In much the same way that abstinence, once undergone, leads to a continued series of abstinences (saving), so an investment decision having been made, there may follow a continued series of investment decisions which

²⁹ See below, pp. 649, 661f.

are required to keep the investor interested in the particular capital goods involved. He may sell the goods, or his interest therein. He may abandon their use. He may wait.

Here it should be noted that the development of the joint-stock corporation, by reducing investment to the purchase of transferable "shares", has tended to reduce both the capital risk and the cost of waiting. One who knows that upon short notice he may be able to dispose of his equities in a business, does not feel so dependent upon the conditions affecting a particular venture. Thus "liquidity" may be considered an element in reducing the cost of investment, and in times of financial uncertainty, securities which offer the maximum of liquidity are often at a premium.

Once saved and seeking productive investment, "savings" look for employment as "working capital" or as concrete capital goods; and one of the limitations upon investment is found in the "cost of investment" in the sense of the price that has to be paid for the capital goods.³⁰ In fact, all the preceding costs of investing (e.g., risk) may be affected in quantity by the amount of savings required for the particular investment. This amount will depend in part upon natural scarcities, and upon costs as they affect the supply prices of capital goods. These costs are discussed in the next section.

(d) *Other costs of producing capital goods.* Thus far in the discussion of the factors pertaining to the supply of capital, the assumption has been made frequently that capital goods exist ready for the investor. It now remains to observe, however, that concrete capital goods, such as tools, machinery, factory buildings, materials and supplies, and stocks of merchandise, have to be made or produced in much the same way that consumers' goods are produced. Indeed, that part of capital savings which takes the form of direct payments to labor, goes into "real wages" and thus is equivalent to advances of consumer goods. Thus one important element in the supply price of capital goods, is the cost of producing such consumers' goods. This affects both the amount of savings required, and

³⁰ If used merely to cover payrolls and materials, the cost of investment is the price of labor (wages) and materials.

the charge that will tend to be made for the services of the capital goods.

Of course, the primary and characteristic cost of capital goods is the cost of abstinence and waiting, as already outlined. These center in the time element, allowing for both the quantity and quality (certainty factor) of time. In other words, capital goods are "future goods", and are differentiated from "present goods" by abstinence and waiting. But capital goods, like wealth in general, could not be made without "land", labor, and enterprise, and very few could now be made without the use of other capital goods. Accordingly, costs other than time costs and investment costs must be considered.

If we assume the existence of a demand (not value) for some consumer-good product, say shoes, and further assume that from this demand there results a demand for some capital good, say shoe machinery; then it is clear that there is also a demand for labor to make the shoe machinery. Furthermore, this labor must tend to receive that part of the demand-price for the machine which will be determined according to the principles already set forth in the chapter on wages. The cost of the shoe-machinery labor, in turn, will have its effect upon the supply price of the shoe machine, as explained in the discussion of "sellers' offers" in the chapter on value determination. The element of enterprise involved in the production of capital goods remains to be discussed in a succeeding chapter.

(e) *Stocks of capital goods; "holding power".* At any given time, it may be found that there are sizable stocks of any particular kind of capital good already in existence. If these stocks are unusually large, they may reduce the value; while if they are unusually small, the importance of the particular capital good may be increased relatively to other kinds of capital goods or to any other object of value. There have been times during the last generation or two, in which there have been notable cases of excess supplies of capital instruments. This has been true in the case of spindles and looms in various branches of the textile industry. It has been true of steamships. It has been true of locomotives. In the case of

various kinds of merchandise considered as raw materials or mercantile stock, temporary surpluses or scarcities are often found. Such a condition obviously affects the *holding power* of those who possess such instruments. When they find the value of their goods declining, they may press upon the market by reducing their supply prices. This has a tendency to decrease the cost of investment.⁸¹ Thus in the course of a great depression, people who have maintained their savings intact are enabled to invest them to good advantage, partly on account of excess stocks of capital goods.

The introduction of the idea of stocks of "old" capital goods as an element in the supply situation along with the costs of making new capital goods, suggests several questions or problems. Does the existence of old capital goods destroy the significance of the costs which were borne in producing them? Does it deprive the time factor of its special importance for capital goods? Does it give rise to significant differentials or "rents"?

The way to understand the matter is to begin at the beginning, and to recognize that all capital goods, by definition, are produced, and at their origin are affected by characteristic costs. We must think of the whole capital equipment of a society as a stream of instrumental goods, some of which are only in process, others newly produced, others beginning to turn out products, and others far along toward wearing out or being abandoned on account of obsolescence. It is to be kept in mind that usually capital goods either are worn out, or are scrapped before the age limit is reached, so that sooner or later "old capital", by losing either its form or its "efficiency" as a productive agent, is destroyed, in an economic sense.

Two important corollaries are: (1) The stream of savings is being more or less continuously invested, withdrawn, and reinvested in a roughly parallel stream of changing concrete capital goods or concrete applications of funds to productive service. By this process, otherwise barren savings are enabled to function in producing valuable goods, and to earn their replacement as well as net interest. (2) The various concrete investments are interrelated in many ways, but more especially in the process by which the supply prices of

⁸¹ To that extent, it tends to increase the *rate* of interest.

their several "services" or "efficiency units" are determined. The concrete capital goods are drawn from the stream of savings. Slowly but surely, moreover, investors withdraw their funds from the less productive forms of investment, and tend to reinvest them in the more productive forms.³² They tend to do so, and usually do, if information and mobility are available—which is a possibility.

Therefore, while immediately a consideration of the particular instruments is of great importance as enabling us to understand the attitudes of those who supply them—the costs of producing them (including labor), the stocks pressing for sale, and the alternative uses available—ultimately our search for causes and explanations takes us back to abstinence, saving, and investment.

The supply of capital, in the sense of the schedule supply or supply intensity, eventually goes back to "abstinence". In the long run, the very existence of capital goods depends upon the thrift and foresight of mature individuals who, by overcoming their innate or acquired tendencies of time-preference and their negative desires or aversions to confronting uncertainty, accumulate the savings which make capital goods possible. Then, as already explained, the investment decision regulates the form and the use, and becomes a factor in determining productivity. Thus we get back to thrift and willingness to wait, as affected by time-preference and degree of certainty. In any society in which reasonable freedom of economic action exists, the constant *tendency* of individuals who invest or who produce capital goods, when they make supply prices, is to consider their costs. (The investor is often a borrower of savings, and a buyer of capital goods.) Thus the supply price of capital goods tends to vary with the "cost of investment", and the cost of investment tends to vary with the conditions that determine its productivity.

Some economists have thought that the existence of "old" capital goods vitiates any theory of interest similar to the one here presented, their argument being that the "costs" of producing them in

³² It is here assumed that, on the whole (but with exceptions), the investments which, under reasonably free competition, show the highest average yield on capital, are those in which capital is most productive.

the past, cease to be effective as time passes. Thus their present value gets out of line with original cost (or value). Investments in old capital goods have to compete with investments in new capital goods. And, since the latter are more efficient, they may return a "differential" to their owners. Thus, on the part of those who invested their savings in the past, there may arise a struggle to secure returns equal to those originally contemplated. In 1938, for example, the investors in railway plant and equipment (and in locomotive and car manufacturing plants!) were engaged in a bitter and apparently losing struggle of this sort. In such cases, high "fixed charges" are usually complained of, and though these have generally been assumed by "enterprise", before long the necessities of the situation lead to some "reorganization". The now over-valued assets are recapitalized or liquidated, and the "cost of investment" is thus readjusted to the reduced value of the capital goods. Then the differential, or quasi-rents, received by the given investors in the more productive forms of capital goods, disappear.

Another question has arisen concerning the overlapping life periods of concrete capital goods, the thought being that, since capital goods are used to produce other capital goods—old capital goods used to produce new—their lives and functions become so intertwined as to be indistinguishable. It is even argued that this makes it impossible to regard time as having any special significance for capital goods.³³ But the very fact that particular capital goods are durable, identifiable, and have different life periods, should be regarded as increasing the significance of time. As already observed, time is not uniform in relation to life; why should it be uniform in relation to economic goods? Time, as related to concrete capital goods, brings out differences in their cost and in their economic productivity. (How can one think of the specific productivity of a dollar?) Moreover, capital does not have to be replaced, as is assumed by the critics last mentioned; and the realities in this respect are most clearly seen when the problem one faces of deciding what concrete capital goods shall be replaced, when, and in what form.

³³ See F. H. Knight, *Ethics of Competition*, p. 261; and article on "Interest", *Encyclopedia of Social Science*.

Two facts will not down, namely (1) the fact that producible economic agents have an economic life which tends to be determined by their net contribution to social income; and (2) the fact that the replacement of capital constitutes a problem which is involved in value determination. These facts cannot be obviated by assuming the perpetuity of capital services or by taking it for granted that the total quantity of capital exists as a fixed and unchanging fund! ⁸⁴

(3) *Supply Quantity*. In addition to supply intensity, which pertains to the attitudes of those who have capital "for sale", there is the other sense in which the word supply is used—namely, that of supply quantity. In the case of capital goods, this concept is particularly difficult, for as was noted on an earlier page, such goods lack homogeneity except in a very abstract and fundamental sense. At first, the only basis for measurement in common seems to be in terms of price. This basis, however, exists only as they are related to economic products. It is in this abstract and fundamental sense, therefore, that we must seek the concept of supply quantity if we are to make it available for use in economic theory.

When considered as a factor of production, and as a participant in functional Distribution, the supply-quantity of capital cannot be measured in money, for the simple reason that the price paid for capital goods is not determined by their quantity. The price paid may have no direct relation to physical productivity. Of course, the number of dollars invested does affect the motivation of the investor, and it has a bearing upon the market for funds. From the standpoint of the valuation of capital as a factor in production, however, *the fundamental sources of homogeneity and commensurability must lie in the specific contribution of capital goods to the supply-quantity of consumers' goods.*

The author's proposal is that the economist should consider capital goods in terms of an abstract unit of technical efficiency. This, no doubt, could be reduced by the physicist to terms of "per-

⁸⁴ This is what the price economists do; e.g., see F. H. Knight, "Ricardian Theory of Production and Distribution", *Canadian Jr. of Econ. and Pol. Sci.*, Vol. I, p. 15 (1935). As a result, they virtually adopt the wages fund theory.

formance". It is in this sense that the phrase "capital-efficiency units" has already been used.

By units of "capital efficiency" will be meant the physical results secured by the aid of concrete capital goods in the following ways: (a) saving labor, (b) aiding labor by increasing its effectiveness, (c) doing what labor cannot do in making available the materials and energies of nature, or in overcoming the limitations of space and time. In these ways, capital serves, and its "services" may be thought of as embodied in products, so that interrelated units of product and units of capital-efficiency can be measured together on the OX axes of our diagrams. These units of capital-efficiency, on the one hand, depend upon the capital good which functions in making some particular product; thus (1) they enter, on the supply side, into the determination of the value of the product. On the other hand, (2) they get their final objective value from the product, according to the number of capital-efficiency units which are required for, and condition the existence of, a unit of the product.

Thus *the value of a capital good tends to equal the sum of the present values of the capital-efficiency units which that capital good gives off during its economic life.*

(4) *Summary: the Process of Equilibration.* The origin and nature of the demand-and-supply forces having been explained, including a

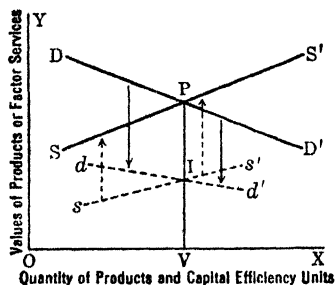


FIG. 26

workable logical concept of capital goods as the supply-quantity of homogeneous "capital-efficiency units", it is now possible to state concisely the process according to which interest is determined. To begin with, the accompanying diagram is presented (Fig. 26).

DD' being, as usual, the demand schedule for a given product, dd' is drawn to represent the demand intensity for capital. The latter is derived from the former, and the space between the two is the demand intensity for labor and enterprise. Similarly, SS' is the supply schedule for the given product,

and it is built up of the supply intensities of labor, capital, and enterprise, the supply schedule of capital being represented by ss' . The space between ss' and SS' is filled by the supply intensities of labor and enterprise. On OX , are measured physical units of product, together with such units of labor-power, capital-efficiency, and entrepreneurial ability as are used in producing the product.

With the given DD' and SS' , the value of a unit of the product tends to be P , and the quantity tends to be OV . Then, as already explained,³⁵ the value of the capital-efficiency unit or units in the marginal unit of product is represented by IV . This magnitude is the value of the quantity of capital efficiency used in producing a marginal unit of product.

Thus OVI is the true total social interest "share" in the total income of the given industry. (It is the same as the area, $WLCI$, in Fig. 23 on page 484.) At the same time, it is the sum of the values of the socially productive services of capital.

This share in Distribution depends immediately upon ss' and dd' . The former, ss' , includes all the costs of abstinence and waiting, holding power, and other supply-intensity factors that affect the attitudes and motivation of those who have to be induced to supply capital goods. The supply of capital—its supply intensity—is in a sense, its own, deriving ultimately from the costs of abstinence, saving, investing, and waiting which condition the existence of capital goods. Capital, however, serves jointly with labor, land, and enterprise; and the supply schedule of the joint *product* is composed of the supply schedules of capital, labor, and enterprise. Accordingly, the height of ss' (and the value of IV) depends partly upon the *quantity* of capital-efficiency units in OV , and especially upon the quantity in the marginal product unit at V . Other elements are the relative subjective worths and holding powers of those who supply the services of the other factors of production, the supply prices and values of which services are combined with the supply price and value of capital service, to make up PV .

Thus we see how closely the conditions of demand and supply are intertwined. As represented by dd' , the demand intensity for

³⁵ Cf. above, p. 485.

capital depends not only upon the intensity of demand for the product, but also upon the proportion of the product demand which has to be deflected to the motivation of the other factors. At the least, there is some minimum amount required for this purpose, which limits the demand for capital. In short, while that demand is, in the last analysis, derived from the demand for some product, it is really a function of the two variables, (1) demand for the product, and (2) joint claims of the other factors of production which serve along with capital, these latter being effective according to various technological and economic conditions which the analysis has shown to determine Distribution.⁸⁶

G. *The Interest Rate vs. Interest*

Few subjects in economics are more thoroughly misunderstood than the nature and determination of interest as a "rate"—the interest *rate*. For example, the business man figures that he pays \$5 a year for the use of \$100 of funds, and by a process of simple arithmetic, he finds that this is a "rate" of 5 per cent. When asked why he pays \$5 rather than \$4 or \$6, he may say that it is because of demand and supply in the money market, but back of that practically meaningless statement, he does not go. Or another business man may say that his annual money income is \$5,000, and that his investment is \$100,000; so that when he divides his investment into his annual money income, he gets a rate of 5 per cent. Of course, this assumes both the annual money income and the investment figure.

Similarly, some economists undertake to explain the interest rate by assuming the value of the annual product of capital goods, and by further assuming the total value of the capital goods themselves. It is then a matter of mere arithmetic to determine the ratio between these two total values!

Or again, the engineer may try his hand at determining interest rates, and he may set up some formula such as the following: Annual saving in labor and overhead (through added plant or equipment), plus increased production, minus added operating expenses, de-

⁸⁶ Cf. above, pp. 481-493.

preciation, insurance, and interest on the investment, is the total interest. The yield or rate is figured on the price paid for the additional plant or equipment. This procedure, however, begs the question by assuming an interest charge. It leaves unanswered the question as to how we know what part of the total net product is attributable to the capital good. It also leaves unanswered the question, What determines the amount that is required to replace the capital good, and it thus assumes the value of the capital good.

Then there are such theories as those which the psychological school of economists propounds, and which we have already touched upon. The rate-of-impatience theory, so-called, assumes the value of the capital good and the value of its products, since it arbitrarily sets up such figures as 100 in the present and 104 in the end of a year. Again, this same school of thought sometimes takes the rate at which the subjective value of a given consumers' good declines during a period of time, as representing the determination of interest rates. Thus diminishing utility is applied to different times without allowing either for the different *degrees* of futurity or for the important element of uncertainty.³⁷ The assumption is that if a given consumers' good is subjectively valued at 100 now, 90 next year, 81 the year following, 72.9 in the year after that, etc., the interest rate is then 10%.

The thesis of this section is that interest, regarded as a *rate*, is a superficial and secondary phenomenon. The point is that the rate of interest depends upon two separate but interrelated primary phenomena, which are (1) the value of capital goods (invested capital), and (2) the value of the annual products attributable to capital (interest). This thesis stands opposed to the treatment of interest rates as being fundamental or primary phenomena, by means of which bond values can be fixed and price levels controlled. The author holds that the determination of "interest" as a total share in the earned social income has to be explained before the determination of the "interest rate" can be explained—that it cannot be assumed as a "datum" or a "perpetual stream" of income.

³⁷ See above, pp. 572f.

Incidentally, it is here assumed that the essential and fundamental problem lies, not in "net interest", but in "gross interest", including the replacement of capital goods.

I. First Approximation; a "Practical" Formula

Two realities, upon which all may agree, appear to be the following: (1) Long-term interest is in practice figured on the "cost of investment", allowance being made for the replacement of that cost. (2) This "cost of investment" is the sum invested, and thus equals either (a) the amount of invested savings, or (b) the price paid for concrete invested capital, or both.

With these "facts" in mind, it may be well to begin with a formula for the determination of the interest rate, which seems concrete and somewhat in accord with business usage. (As usual, however, it will be observed that formulae which run in business terms are apt to contain some question-begging implications, and the following one involves a resort to undetermined residual elements.)

$$\text{Interest Rate} = \frac{(\text{Total Product Units} \times \text{Selling Price}) - (\text{Wages} + \text{profits} + \text{rent})}{\text{"Cost of Investment"}} \div \frac{\text{Life of capital good}}$$

It will be observed that this formula assumes the existence of certain values of objects which have not been entirely explained. As to the numerator, the product units and the determination of the prices at which they may sell, might be taken for granted, since we now know that they can be explained scientifically. But the price of the product depends in part upon the "supply prices" of capital service, enterprise, and labor power, so that in fact, interest, profits, and wages are interrelated and must be explained jointly.

As to the denominator, it is in reality a value (the sum invested) and is apt to be arrived at in a way which assumes the interest rate.³⁸ It may be assumed, however, that the "cost of investment" tends to cover the cost of making any capital goods that are involved, including the labor and enterprise which go into the pro-

³⁸ But it is not necessary to base the so-called value of invested capital upon any assumed rate of interest. In fact, the value of capital goods as producible

duction of such goods; and that it also involves the cost of any funds which may be required to "finance" the purchase, and which take us back to the time factor as it affects the costs of saving and waiting.

It is the cost of investment which demands "replacement", and this replacement, if it occurs, is on the basis of an allowance per year or other time unit, according to the life of the particular investment or capital goods. Thus the replacement fund that may be "charged" as "depreciation", depends upon the total investment and its *economic* life. And if the fund and the investment are equal, they cancel, leaving the remaining product of capital as "net interest", allowance having been made for the wages, profits, and rent earned jointly. Clearly, much depends upon the "cost of investment", whether it be figured as that originally incurred or that required for replacement at any subsequent time, and whether as a subjective estimate or an objective value; but the main question is, Can the capital good earn the gross interest required to motivate the saver and investor, and set in motion the forces that determine its existence and use?

The net result is that we have here a formula which seeks to base the rate upon a relation between "productivity" and "costs", and to relate all to the passage of time. The productivity element in the numerator suggests the concept of the marginal demand-intensity for capital, measured as a rate per unit of capital-efficiency, including ability to earn replacement. The cost element in the denominator suggests the concept of the marginal supply-intensity of capital, with reference to the total of all elements which limit the supply of the capital goods and working capital included in the investment.

The duration of the period of productivity is a factor in the total product, so that the life period of the capital goods has a bearing upon both (a) the annual amount required for replacement, and (b) the "net interest", the latter being what the capital goods instruments, is not determined by capitalizing their income. Their income (interest) and their value are jointly determined, and the "rate" of the interest then appears. Most emphatically, we cannot take the income of invested capital for granted as a "given fact".

tribute to production over and above replacement. The duration of the particular investment, or the concrete capital goods, is a factor in the cost that arises on account of time preference (and associated uncertainty), and has a bearing upon abstinence, saving, and waiting.

What the numerator and denominator have in common cancels out, leaving a ratio, or rate, which has somewhat the same general significance as the rate of wages per unit of labor or of rent per unit of land efficiency.

The difference between (1) the total product of capital during its life, and (2) the cost of the investment, is the sum from which gross interest must come. If we deduct replacement cost, the balance is "net interest".

2. Basis for a True Theory

We may now take the first step toward a true explanation of the interest rate by observing that, in a broad and fundamental way, any interest *rate* pertaining to capital goods must involve a ratio between two different and separable elements: (1) the productivity of invested capital (capital goods), and (2) the cost of investment (abstinence, saving, investing, waiting, and making capital goods). This is true because interest as a "rate" involves a ratio in which the value of the capital goods plays a part, as well as the income derived therefrom. Any formula which will explain the interest rate, therefore, must be based upon the schedule of demand intensities for the product, and the schedule of supply intensities affecting the capital good. In other words, the elementary approach, in terms of equilibrium, may be expressed as follows:

$$\text{Interest rate} \propto \frac{\text{Demand intensity (productivity of capital goods)}}{\text{Supply intensity (cost of capital goods)}}$$

The foregoing, however, is not an adequate explanation, and it does not afford either a complete basis for the determination of interest rates, or one that can be applied in a practical way. It gives no per-annum rate. *To serve as the basis for an objective market rate of interest, the "principal" must be an objective value.*

It cannot be a mere cost or supply price which is subjective and without necessary relation to productivity.

3. A True Explanation of the Interest Rate

For the adequate determination of interest as a rate, a complete basis is furnished, however, by analyses of the determination of the value of the capital service (income), on the one hand, and of the determination of the value of the capital good itself (investment), on the other. It is in the relation between these two objective items that the immediate practical significance of the interest *rate* lies. Thus we may present the following more definite formula:

$$\text{Interest rate} = \frac{\text{Annual gross interest earned}}{\text{Value of capital goods}} = \frac{\text{Value per capital-efficiency unit}^{89} \times \text{current annual rate of output}}{\text{Value of capital goods}}$$

The foregoing fraction gives us the basic interest rate. In this fraction, the numerator is the value of some annual product, which in turn depends directly upon the demand for the product, the number of capital-efficiency units required, and the value per unit (as determined according to the theory of interest). It is important to note that the "annual gross interest earned", as employed in this formula, is subject to change; it is likely to change from time to time according to the price of the product and the operating rate of the capital goods. Thus we do not refer to it as being dependent upon the number of capital-efficiency units turned out *per year*; but we refer to the "current annual rate" of output which prevails, or seems likely to prevail, at the time that the estimate is made: It is on some such basis as this that the judgments of those actually in the market will depend.

The denominator is the value of invested capital. The next point to note, therefore, is that the *value of a capital good is not determined by a process of "capitalizing" its income as estimated at a given time*; for such a process, even if it were logical, would neces-

⁸⁹ Determined by equilibration of demand and supply schedules for the services of capital goods, the process being synchronous with the determination of the value of the product. Cf. p. 606f.

sarily involve the assumption of the interest rate itself. If we were to assume the income, this would make the interest rate a mere matter of the number of years' of life of the capital good, which is entirely too simple.

Or, instead of capitalizing the income, we might estimate the actual total income by a process of discounting and summing up the total number of capital-efficiency units which are to be yielded during the estimated life of the capital good. This more realistic approach would provide for some allowance for the conditions governing the economic life of the good, such as certainty and price changes. But it would involve the assumption of a rate of discount for future income; and it would make the value of the capital good depend solely upon income, thus taking no account of costs. It, too, would make the rate of interest depend upon the life of the capital good.

The value of any capital good is, of course, *related to* the value of its product, the direct relationship being on the demand side of capital. Indeed, the two values are interrelated, and are determined at the same time as part of a joint process. But a part of this process is governed by the motives which lead to the creation of capital, and concerns the costs of producing the capital good. Since we are considering the value of capital as set over against the value of the product, or the demand, it is this supply side which must be considered immediately in our analysis.

According to the general theory of value determination developed in this work, the following is a classification of forces that must be equilibrated in order to determine the value of invested capital:

- A. *Marginal supply price of a capital good, or offer of marginal seller.*
 - (1) Cost of abstinence.
 - (2) Cost of investing.
 - (3) Costs and expenses of labor, materials, and enterprise used in making the capital good.
 - (4) Supply price of old capital goods available for the particular product.
- B. *Marginal demand price of a capital good, or bid of marginal buyer.*
 - (1) Estimated (discounted) total value of capital-efficiency units produced during the economic life of the capital good (technical efficiency and sales prospects).

- (2) Relative abundance and supply prices of the several factors of production *used jointly with capital* in making the product.
- (3) Expense for "funds" (effect of non-investment demands).

At once, it is apparent that, while the value of the product and the value of the agent or factor of production, are interrelated, the two are distinct. *They need not even vary directly with relation to one another; for positive desire works through the product on the side of demand-price, while negative desire or cost has its primary effect upon the factor of production.* The business man says that the value of his capital goods depends upon the "profitableness" of the investment; but that condition is known only by comparing the "cost of investment" with the income.

It seems to follow that, since savings and capital goods can be increased indefinitely, the value of such goods will tend toward equilibrium at any level where the value of the invested capital which is sanctioned by value of product, equals the "cost of the investment", and eventually the costs of abstinence, investing, and making capital goods.

4. Significance of Interest as a Rate; an Index of Equilibrium

The two values, the value of the product and the value of the capital good, therefore, seem to be hopelessly interdependent; and one might conclude that the rate of interest, considered as ratio between them, has little significance. But there is an independent element in the value of the product, just as there is in the value of the factor of production. The utility of the product is independent of the cost of the capital good, and *vice versa*. And looked at in this way, we may say that the ratio between the two has some significance. To put the matter in a different way, when we divide the value of the product by the value of the factor of production, we are bound to cancel out those elements which are qualitatively and quantitatively the same. For example, to the extent that the demand intensity for the capital good derives from the demand intensity for the product, such is the case. So, too, with the time factor, insofar as it affects "product discount" and "factor saving" equally.

In short, the meaning of interest *as a rate* lies in its service as an

index of equilibrium between (1) the demand schedule for the services or efficiency-units of capital goods, as measured in products, and (2) the supply schedule for capital goods. An interest rate, however, is an index merely of the *relative* strength of demand and supply forces in relation to capital, and this means, not quantities of capital demanded and supplied, but intensities of demand and supply schedules. Thus the same rate may exist with different levels or heights of demand and supply prices; and the effect of a decrease in demand intensity in tending to reduce interest rates, may be offset by a rise in supply prices. For example, we find interest rates apparently low at times of depression when the demand for capital is low, although the supply schedules may remain high on account of uncertainties and risks. (This condition is usually accompanied by a small volume of productive loans and investments.)

In this connection, too, we note that the time factor, as related to the life of the capital good, plays its part. It affects both the costs of abstinence and waiting, and the discount in the value of the future products. And the whole process of valuation of capital goods might be described in terms of equilibrating (1) "abstinence" with (2) "time preference"—equilibrating the costs of abstinence, saving, and waiting (which tend to increase according to the length of the time period) with the desire for the product (which tends to decrease according to the length of the time period).

Thus considered, the process of equilibration works out as follows: If, within a seemingly representative period of time, the value of capital-efficiency units, or the gross interest, is so low that it promises during the ordinary life of the investment to be less than the cost or expense of the investment, the tendency will be to scrap the capital good, or to shorten its life, or to "reorganize" and establish a lower capitalization. (Inability to earn the prevailing interest rate unless there be a reduction in capitalization, may be the way the situation is characterized.) In this case, there is a reduced demand for the particular capital goods, and thus a lower "cost of investment" tends to be established.

If, however, the probable total income seems likely to exceed the cost, a valuation based upon a capitalization of earnings will exceed

the original cost of investment. At the prevailing interest rate, the capital good can earn interest on a higher capitalization. More of such capital goods will be demanded, and both a prolongation of the economic life of such goods, and an increase in the cost of investment therein, are to be expected.

H. *Old Capital Goods and Quasi-Rents*

One great problem pertaining to capital and interest, lies in the adjustment between the cost of concrete capital goods and the income received therefrom. As not a few economists have pointed out, notably Alfred Marshall, once capital has been created and embodied in capital goods through a process of investment, it may continue to exist and function while its earnings show no relation to the original cost. It is almost as if a man had been raised at great trouble and expense, and turned loose in the world to earn his living, only to find that through some defect in body, mind, or character, he is unable to do so. Frequently, we hear the statement that the investment does not earn fixed charges. Thus there arises the problem of accumulated surplus stocks of capital goods—locomotives, looms, what not.

Under such circumstances, the problem of value of capital goods temporarily takes on an aspect different from that which usually prevails. Under these conditions, the value of "old capital" is determined by a process of capitalizing such earnings as the existing "fixed" capital goods may be able to bring, without regard to the costs involved in producing them. (Such costs are water over the dam.) The supply of the capital, in other words, is for the moment taken for granted as a matter of natural scarcity, and thus resembles the supply of land. And accordingly, the interest temporarily becomes a quasi-rent. Under such circumstances, we may say that the annual return of the capital is simply the total product expected during its life, divided by the number of years it will function. But this gives us no basis for the determination of a percentage or interest rate. In fact, it obviously assumes the interest rate, inasmuch as the value of the capital is determined by a process of capitalization.

While the foregoing phenomenon is all too often of practical importance, particularly in connection with the various phases of the business cycle,—and will always be of importance as long as men are influenced by sentiment and hampered by ignorance,—it is none the less true that the *tendency* is always toward an adjustment of the supply of capital goods according to the demand for the products which such goods contribute. Therefore, while by no means denying or overlooking the practical importance of “quasi-rents” which arise on old capital goods, economic science should treat such phenomena as being the exception, and *as running counter to forces which constantly tend to make those phenomena tend to disappear.*

I. Short-Term Interest Rates

1. Relation to Basic Long-Term Rates

The discussion thus far has dealt almost exclusively with interest, and the interest rate, considered as a normal return to or rate on invested capital. It has been confined to the “basic” interest rate, such as is most nearly represented in practice by the yield on high grade bonds, and which has for many years tended to oscillate moderately around a level which closely approximates 4 per cent. There remains, however, the well-known phenomenon of the money market with its short-term interest rates, or “money rates”, as they are usually called. These include, for example, the income from call loans, time loans, and commercial paper. While short-term money rates are in part determined by conditions outside those which govern the basic interest rate, the two are obviously interrelated, and this interrelation few observers will question, inasmuch as curves plotted to show the courses of the two vary in much the same direction. The short-term money rate merely swings more widely than does the basic interest rate as represented by the yield on high grade bonds. For example, the bond yield may swing between 3 per cent and 5 per cent in the course of a series of business cycles, while the commercial paper rate will swing in the same direction, but within a range of from 2 per cent to 6 per

cent, and the "call money" rate will fluctuate between 1 per cent and 8 per cent.

The significance of the basic interest rate, which may be thought of as the yield on invested capital, lies in the fact that *in the long run* the interest "share" in the social income must (1) be limited to the product of capital, and must (2) be enough to motivate individuals to abstain, save, invest, and wait (i.e., to "cover the cost"). The short-term money rate, however, is governed by the conditions which determine the normal or basic rate only to the extent that the demand for and supply of *uninvested* funds are so governed. The chief basis of interrelation between the two lies in the investment demand.

The supply of funds in the short-term money market represents uninvested savings. The demand for such funds comes from three main sources: (1) investment in capital goods, (2) speculation, and (3) the purchase of consumers' goods. If the sole demand for uninvested funds lay in the investment market, the interrelation between the two kinds of rates would be direct and compelling. Such, however, is not the case. The profitableness of the use of loanable funds has in the past been influenced chiefly by the volume of stock-market speculation, loans on stock exchange collateral having probably accounted for over half the total volume of short-term loans.⁴⁰ This demand has naturally varied with the volume of trading, the price of stocks, and the level of margin requirements. Other important elements have been the volume of new security issues, and the outlook for business prosperity as seen by business men and bankers: when general business activity is trending upwards, the demand for short-term loans to meet payrolls and buy materials and merchandise, is keen; rising prices lead to accumulations of inventories and increased forward buying.

In recent years, installment buying has become a considerable factor in the demand for short-term funds, an enormous volume of such durable articles as automobiles, radios, musical instruments, clothing, furniture, and the like, being sold "on time". This phenomenon is mentioned merely to give some small indication of one

⁴⁰ In the United States, prior to 1933.

large factor in the demand for short-term credit which, being for consumption purposes, is not immediately related to the basic yield on capital goods.

In addition to such matters, there are the seasonal or accidental factors which have considerable bearing upon the short-term swings of the so-called money rate, such factors including the movement of crops, holiday trade, dividend and interest dates, quarterly tax payments, and government financing.

This being a discussion which aims to deal with general theory, little need be said here with reference to the supply of loanable funds. Ultimately, the supply of such funds is governed chiefly by the factors which affect individual saving and waiting. Immediately, and as seen by business men, the supply is chiefly a matter of bank reserves, and is affected by the international movement of gold and the condition of the banks, including in the United States both the Reserve Banks and the member banks. Such items as the reserve ratio of the central bank, the ratio of the net reserves to the deposits of the member banks, and ratio of loans and investments to total deposits in the member banks, will naturally be indications of the supply of loanable funds. To these things, must be added the balances of corporations and of individuals who have funds to lend.

Unquestionably, conditions in the short-term money market may and do sometimes affect the long-term or basic interest rate; and the fundamental explanation of such an effect has been pointed out in discussing the cost of investment and the value of capital goods. The condition of the money market will govern the possibility of floating securities—that is, borrowing investment funds—and consequently, the cost and the value of capital goods. The investment policies of corporations and banks are certainly influenced by short-term money rates, and banks have been known to lend more freely on call when short-term rates are high, even to the extent of selling “investments” for that purpose.

2. Short-Term Interest Rates Not Fundamental or Controlling

It would be a great mistake, however, to conclude that short-term interest rates control bond values, and in this way or otherwise, determine the yield on invested capital. This all-too-common error should be carefully avoided. It is true enough that at any given time the yield on bonds is calculated by dividing the price of the bond into the coupon payments. This is a matter of temporary convenience and arithmetic. It does not follow, however, that the price of the bond is determined by dividing the current money rate into the coupons! (And "the money rate" is not to be confused with the yield of any particular bond!) The price of the bond is a matter of the value of an investment which depends upon anticipated net earnings during the life of that investment, to estimate which would take us into considerations which govern the supply of funds seeking investment in capital goods, as well as their productivity—matters already discussed at length. Of course, the value of a bond is *related* to the interest rate. We may say that *if* the value of the bond were derived solely from earnings (interest paid), then the value would be in proportion to the total earnings, and the annual rate would be merely the ratio of the total earnings (value of the bond) to the annual earnings. In other words, it would be a matter of time. But the value of a bond is dependent upon considerations other than the demand therefor. The earnings involved are *net* earnings, and this implies that costs have to be considered. There is the whole supply side to be dealt with. The basic interest rate must reflect the ratio of the annual gross interest earned by capital goods to the objective value of the capital good, allowing for costs. It will be influenced, not only by the short-term money market, but also by the prices of products, the supply of labor and other factors of production, and numerous other considerations.

Both in theory and in practical matters pertaining to the investment market, one of the most serious illusions and delusions now prevalent is the one which centers in the thought that "easy money" makes business good, and *vice versa*. This is much the same as

saying that short-term money rates govern investment yields. One aspect of the matter is found in the notion entertained not only by business men and bankers, but also by some well-known economists, that commodity prices and general conditions can be governed by artificial manipulation of the money market. Professor Cassel, for example, has so argued.⁴¹ He has regarded the *rate* of interest as being a price, and held that by manipulating the rate in the money market, it is possible for the manipulator to raise or lower the prices of goods, at least to the extent that they require the use of capital for their production.

As a matter of fact, all the empirical evidence runs the other way. The commodity price curve leads the curve of short-term money rates, say the commercial paper rate. This is, as one would expect, a result of the fact that the movement of commodity prices affects directly the productivity of capital goods, and also the rate of discount in the lender's mind.

As to the possibility of controlling the price level through manipulation of bank credit, we need remember only that the banks, whether government owned or not, have no complete control over credit except on the *supply* side. They have little to say about the *demand* therefor, either as to the total amount of funds that will be demanded, or as to the direction that any demand will take as between commodities or securities. Investment, speculation, consumption, and hoarding, are not in air-tight compartments.

Finally, our theory makes it abundantly clear that the existence of *uncertainty* makes any results that may come from changes in interest rates indeterminate. Particularly is this apparent in connection with the sharing of the joint products of industry among labor, capital, and enterprise. If political interference with economic forces makes the volume of production, sales, and unit costs uncertain, low interest rates may not stimulate business activity. And if wages or farm prices are artificially raised—or if such a raise be threatened—the availability of loanable funds at low rates may have no effect.

Experience has amply demonstrated what sound theory predicted,

⁴¹ *Q. J. E.*, 1928.

namely that no matter how abundant the quantity of credit currency or bank "deposits", and how low the level of "money rates" may be forced artificially, no loans or investments of a productive sort may be demanded or made. (Such was the case between September, 1937, and June, 1938, in the United States.) The true rate of interest is the result of the motivating forces which govern the productivity and cost and value of invested capital, among which not only individual time-preference, but also uncertainty and risks, are important elements. When loans decline while deposits grow, and private corporation bond-yields—if any—are high (because bond prices are low) while "money rates" are low, the probability is that the demand schedule of capital has fallen and the supply schedule ⁴² has risen, so that the amount of investment is contracted and small.

J. Summary Statement

In this chapter, the attempt has been made to analyze the determination of interest as a share in Distribution according to the definition of Distribution presented on page 493. Thus it has been considered as the result of a continuous process going on in society, and one which involves both the technological services of capital goods and the use of money as a means of saving and investment. We have not assumed that capital goods automatically replace themselves without change, and consequently have considered the gross income, not hesitating to confront the question as to whether the economic life of a particular investment will be long or short.

It is found that the maximum share available for interest depends upon the earnings in particular industries which are available for particular investments of capital, as determined by productivity, relative abundance of factors, certainty as to the future, etc. The minimum which will have to be shared among those who contribute capital, is found to depend partly upon the conditions which affect the supply of loanable funds, notably abstinence and saving, and partly upon those which affect the cost of investment, notably the degree of certainty, waiting, and the cost of producing concrete capital goods.

⁴² "Supply prices"; not quantity supplied.

A sharp distinction is made between interest and the interest *rate*, treating the latter as a secondary phenomenon dependent upon the annual income of invested capital and the cost of investment.

It is now possible to sum up the findings briefly as follows:

(1) The value of any concrete body of invested capital (capital goods or funds employed as circulating capital) is determined by the various conditions of demand and supply, at the point where the marginal supply price and the marginal demand price are equalized. The marginal demand price is the bid of the marginal buyer or buyers of the capital, depending upon estimated earnings, the relative abundance of the several factors of production, the cost of funds, and related conditions as set forth in the preceding pages. The marginal supply price is the offer of the marginal seller or sellers, depending in the last analysis chiefly upon the costs of abstinence, saving, waiting and investing, and the cost of producing any capital goods involved.

(2) The basic interest rate, or the rate on invested capital, tends to equal the ratio of (a) the annual return on concrete bodies of capital employed in production to (b) the value of such concrete bodies of capital. The determination of the value of invested capital is explained in the foregoing point. The annual return thereon is the share of the total product that is attributable to capital as explained on pages 593-607 and 623, divided by the life of the investment.

(3) Uninvested savings or loanable funds, and capital goods, can be multiplied indefinitely; therefore, there tends to be an equilibrium between (a) the demand for the products of capital and (b) the costs of abstinence, saving, investment, waiting, and manufacturing capital goods.

(4) The "money market" (credit) is interrelated with the basic interest rate through investment demand, affecting interest and the interest rate to the extent that they depend upon (a) the supply of funds available for investment, and upon (b) the cost of investment.

These four may be called the laws of interest.

Chapter XII

ENTERPRISE AND PROFITS¹

Probably economists differ more widely with reference to the nature and determination of "profits" than is the case with any other of the so-called shares in Distribution. It is apparent, therefore, that a careful analysis and classification of the various theories of profit which have been held by economists, is especially desirable, since such a classification will enable us to locate more exactly the source of the differences of opinion. Possibly, too, it may help to suggest the true theory.

I. A CLASSIFICATION AND CRITICAL EXAMINATION OF PROFITS THEORIES

To begin with, all theories of profits may be divided into two broad classes, the non-functional and the functional. Those economists who have dealt with profits as being an income which has no direct relation to the performance of an economic function, have been surprisingly numerous. This condition is surprising, because unless profits be the "result" of the functioning through human activity of some measurable economic force or forces, which

¹ Articles by Barnett and Tuttle in *Economic Essays in Honor of J. B. Clark* (1927).

S. Budge, *Der Kapitalprofit* (1920).

M. Dobb, *Capitalist Enterprise and Social Progress* (1925).

C. J. Foreman, *Efficiency and Scarcity Profits* (1930).

P. C. Ghosh, *The Theory of Profits* (1933).

L. H. Haney, *Business Organization and Combination*, 3rd ed. (1934), I, III, XVII, XVIII, 139, 388.

F. B. Hawley, *Enterprise and the Productive Process* (1907).

F. H. Knight, *Risk, Uncertainty, and Profit* (1921).

A. Lampe, *Versuch zur Theorie des Unternehmersgewinn* (1934).

Mithoff, "Unternehmer", *Schönberg's Handbuch*.

Suranyi-Unger, *Economics in Twentieth Century* (1921), (in chapters on "Distribution" see notes to sections dealing with "Profits").

"result" uniformly follows the operation of the causal force, it must be impossible to deal with their determination in a scientific way.

A. Non-functional or Unscientific Theories of Profits

1. Class Income Theory

Some of the early economists, particularly in the eighteenth century, were strongly inclined to regard profits—as well as other parts of the social income—as being the income appropriate to some sort of a social "class". In the case of profits, the idea was that they are the "proper" income of the capitalist-employer class. Undoubtedly, there was some more or less vague idea as to the services performed by such classes, and further, that their incomes had something to do with the performance of such services. The tendency, however, was to regard the income as a rightful appurtenance to membership in the class, and to give little thought to the concept of a direct quantitative relationship between function and result or reward. This sort of thinking is most apt to be found where there prevails the idea of a "natural order" or "law of nature".

2. Negative Theories; the Residual-Claimant Doctrine

The widespread idea that profits require no other explanation than that they are the difference between a certain income and a certain outgo, which difference remains as a residuum in the hands of the profit-receiving class, was held not only by early economists, but also by not a few today. It has two different forms, as follows:

(1) The first phase of *the residual claimant theory* is that profits are the residuum left after deducting from the total income of a business the contractual payments, or expenses, of the business. In other words, the profits of any business are the differences between its net sales and its expenses; and the total profits of the nation are made up of the sum of the profits of individual businesses.

This very common notion, despite its persistence, is one of the easiest to overthrow. It is necessary only to ask, *Why* is there anything left? Or, if this question does not register at once, one may ask, *Why is the total income of the business larger than the total*

expenses? It then becomes apparent that the gross income is, as a matter of fact, being taken for granted by the residual-claimant theorist; at least, it is being taken for granted that the relation of the income to expenses will be such that something remains for the so-called profits.

A more fundamental objection, however, is the fact that such reasoning allows no causal relationship between the profits and the price out of which the profits (if any) must come. That is, it recognizes no necessary function performed by any agency which must be motivated by profits. It is further apparent that the residual theory must consider the supply of the factor with which profits are associated, whether capital or enterprise, as being indefinitely elastic; since otherwise, the quantity of the profit-receiving factor available would have something to do independently with the determination of the amount of profits.

In sum, the residual claimant theory does not explain profits; it merely propounds a means of measuring profits if, as, and when they exist.

(2) The second phase of the residual-claimant theory deals with a total for society as a whole. The idea is that the actual total money income of society is to be taken for any given period, and that from such income there is to be deducted the income that would exist under perfect competition. The difference is profits—or loss. In other words, if we take the quantity of goods sold within a given period, and multiply those goods by their prices, we get a certain sales volume. If this total sales volume exceeds the actual total cost of producing those goods, including wages and interest, there is a share for enterprise, and this share is profits.

Obviously, this line of reasoning assumes that prices exist and are determined independently of the services of the enterpriser or the one who receives profits. Clearly such a notion does not require the existence of any "enterprise", or any agent of production which is peculiarly associated with profits; and it also regards profits themselves as temporary, and perhaps non-existent in a condition of competitive equilibrium. Finally, one notes that if this attempt at explaining profits be advanced as a theory for the determination

of that share, it has the great weakness of *assuming* that some competitive-equilibrium income can be known, and that its determination can be explained, without the existence of any factor of production in addition to labor, capital, and land.

These residual theories were common in early Classical thought, as for example, in the economics of David Ricardo. Nowadays, in what has come to be called "business economics", we find a similar tendency. The contractual shares, in the shape of "payments" to the several agents of production, are taken for granted, and as "expenses", are deducted from the total income of the enterprise to determine what profits exist. This is the entrepreneur point of view. It is accountancy rather than economics.

Finally, one finds some tendency toward a residual theory of profits among certain Socialistic thinkers, since they would regard profits as unnecessary or exploitative, and would thus regard the enterpriser as one who unnecessarily takes a sort of residuum.²

Such residual theories tend to break down, and to adopt one of two methods of supplying the missing causal explanation. Either (1) they tacitly adopt a half-concealed assumption concerning certain costs undergone by the enterpriser, and allude to the necessity that these costs have to be compensated in order to induce him to function (e.g., Adam Smith and David Ricardo); or (2) they rely upon "dynamic" conditions as an explanation of the existence of a larger income than is necessary to explain the functioning of the agents of production. In the latter case, they hold that profits are only temporary, and either tend to disappear or to be eliminated as the result of competition, thus making them the result of a lack of equilibrium. In this case, the difference, or residuum, differs from the other in its duration. (This dynamic idea is predominant in the thought of J. B. Clark and F. H. Knight.)

Probably there will be found concealed in all theories of residual shares, a tendency to exaggerate the importance of some one of the several agents of production, usually labor, but sometimes capital. The result is that any other factors or agents are of secondary importance, and their shares are then apt to be treated as residual.

² E.g., see W. Sombart, *Moderner Capitalismus* (1927).

A Socialist thinker, for example, who believes that labor is the only factor of production which counts, finds it easy to accept the idea that interest and profits are mere residual incomes.

3. Chance or Luck

Those who attempt to explain profits as being a matter of *pure chance* clearly defeat themselves. If the profit-takers had to rely upon pure chance, there would be no net total share for any considerable period of time. Their position would resemble that of one who tried to make a living by gambling on the fall of a coin, saying "heads" or "tails" at random.

Less naïve than the idea of pure chance, however, is what we may call the *good gambler theory*. In this case, the idea is that, while a profit depends upon a chance occurrence, the enterpriser by skill is able to "beat the game". A good enterpriser is thought of as one who knows what the chances are, and plays accordingly. He therefore wins, in the sense that a skillful poker player may win. This theory points in the direction of the truth, and suggests the way to a real causal explanation of profits.

But, for reasons already referred to, the good gambler theory can do no more than point in that direction. The basic trouble is that it makes the skill consist in dealing with phenomena which are matters of pure chance. If bona fide, gambling is still gambling, whether done by the professional or the amateur. As a matter of pure chance, there is no room for explaining the functioning of a factor of production which contributes to the social income. Moreover, it is to be noted that the skill in this case operates as a force which reduces the chance element. Thus it tends to reduce the risk and to eliminate the chance, so that with perfect skill there would be no chance, and no profits.

B. *Functional or Scientific Theories of Profits*

We pass now to a more considerable group of theories of profits. These differ from the preceding in that all attempt to deal with the functions performed by some factor of production, which function serves as the basis for a share in the social income. Such the-

ories are necessarily positive, as opposed to the negative residual-claimant theories. They are also positive in the sense that they do not rely upon pure chance, and thus they undertake to explain a share which always—even in the long run—tends to be above zero.

1. "Static" Theories, Which Regard Profits as Necessary and Permanent Shares in Distribution under Effective Competition

(1) Theories which hold that profits are earned, in the sense that they are justified by valuable *services rendered*, either in making additions to product or in bearing costs. These include productivity theories and cost theories of profits, as follows:

(a) *Productivity theories.* The characteristic idea in the productivity theories is that profits are earned by the productivity of the enterpriser or capitalist, and that they are a necessary and permanent part of the social income. There are several variants of the productivity theory.

(i) A good many English and some German economists have thought that the productivity which explains profits, lies in *the functioning of capital*. For example, there are those who hold that the enterpriser's share depends upon the amount of capital which he has available and uses in his business. Thus, even when they recognize enterprise as being a nominally distinct factor, these theorists still make the enterpriser's profit depend upon the functioning of another agent, namely capital. For example, Alfred Marshall calculates profits as a return on capital; and it is very common among economists and business men to speak of profits as being such-and-such a percentage on the investment. Obviously, however, profits are not necessarily in proportion to capital; rather they depend upon how the capital is used. Two enterprisers having equal amounts of capital, even in the same kind of business, would not be supposed to show the same profits. In fact, it is probable that the amount of capital which an enterpriser has at his disposal will, in the long run, depend upon his ability as an enterpriser; and it would thus be far from fundamental reasoning to make his profits depend upon his capital.

Other productivity theories which emphasize capital, however, hold that it is not the amount of capital which determines the profits, but the skill with which the enterpriser uses the capital, as for example, the way in which he directs the funds which are in his possession. Obviously, this line of reasoning makes the profits depend both upon the possession of capital, and upon the efficiency of the management of the capital. It thus partakes partly of the preceding theory and its weakness, while partly it leads us on to the next sub-head under the group of productivity theories; namely, the labor-productivity theories of profits.

(ii) A group of economists, best represented in French thought, have long held that the work of the enterpriser is a form of labor, and that profits depend upon the *skill and energy displayed by the enterpriser in the form of the "labor of management"*. Such a theory is presented by Emile de Laveleye. Enterprise is held to be essentially one with labor. At least, it is held to be a special kind of labor; and, of course, it follows that profits are regarded as the reward for a special kind of labor.

But at once, we note that any skill and energy which can be described as labor, can be bought in the market, and paid for in the shape of wages. Much managerial and high-salaried labor is so bought. A more fundamental point than that, is the fact that the kind of ability displayed by the responsible employer of laborers or salaried employees is essentially different in quality from the abilities of those whom he employs. (This will be made entirely clear in the subsequent discussion.³) Finally, it is to be noted that profits vary with little or no relation to that sort of human exertion which can be described as constituting labor. This point is made by Alfred Marshall himself, and seems to the author to be well taken. But if profits do not vary with relation to such human exertion, they cannot be held to be dependent upon labor.

(b) *Cost theories.* The idea here is that profits are not dependent—directly, at least—upon the productivity of the enterpriser, but upon the costs which he bears. Doubtless, it is assumed that bearing costs is a "service", and probably that it is justified to some extent

³ See pp. 642ff.

by productivity; but the amount of profits is thought of as a compensation for cost and determined by the cost.

(i) Some of those who hold to static theories of earned profits, maintain that the determining factor is the cost which pertains to the *possession of capital*. The main point seems to be that the enterpriser, as the possessor of capital, runs the risk of losing that capital, and consequently profits are required as a compensation or motivating reward. This idea appears to be a part of Marshall's thought.

(ii) Other cost theorists, however, hold that *a sort of labor cost* is undergone by the enterpriser, and that profits are the compensation for such cost. Apparently the cost in this case is the irksomeness of the labor of management.

(iii) Finally, we come to the most important of the cost theories, F. B. Hawley's theory that profits are dependent upon and determined by "*business risks*". Hawley's well-known theory holds that profits are due to the existence of business risks, and constitute a premium for bearing such risks. The owner of a business runs the risk of that business; for this risk is known to exist, and since business risk is non-insurable, there is no way of passing it on to another. In other words, such risk-bearing cannot be hired. But it will not be assumed without compensation. In brief, it is reasoned that no business can be conducted without some characteristic business risk; that some one must bear this risk; and, therefore, that a reward in the shape of profits is necessary.

This business-risk theory, by its widespread partial acceptance, is seen to contain some measure of truth. The emphasis upon "ownership," however, is unfortunate, since ownership is indefinite, both as to the nature of the title assumed and as to the scope of the property rights with reference to the different material agents which must be combined in a business enterprise. Moreover, risks of essentially the same sort would necessarily be run, without any property rights, either by an isolated individual or by a Communist state.

Risk cannot be a complete explanation of profits. We may grant that a compensation for risk-taking is necessary in order to induce

people to incur the unpleasantness that it brings; but that merely makes it necessary to take a further step to prove that the risk itself is necessary, and necessary in the form of a business enterprise. Moreover, we have to ask and answer the question, What does the enterpriser do to *deserve* the reward for the risk that he assumes? Or in other words—and perhaps this is the most significant question of all—how can society afford to pay the enterpriser for his risk-bearing?

Profits do not, in fact, vary with the degree of risk assumed by the enterpriser. For one thing, cases are found in which, in a given locality and branch of industry, practically the same risks affect all of a group of enterprisers. In such cases, however, one expects to find that profits will differ, as in fact they do. Again, differences in risk exist in different industries without there being apparent any proportional differences in profits. After all, there is no more reason to assume that profits should vary in proportion to business risk than there is to assume that wages should vary in proportion to the risk (or other costs) of the laborer's occupation.

Risk is like cost in general in that it cannot explain the *possibility* of its own reward. It is not sufficient that men do difficult things or unpleasant things or risky things. They must also do things which are productive and which provide the basis for their own reward. Virtue may be its own reward; but not risk—except in such non-economic situations as big game hunting and the like. Merely taking a risk will not insure a premium. Obviously, one has to rely upon some skill in meeting the risk, no matter what its reward; and some productivity must exist before it can become possible to pay any premium.

Finally, as already noted in passing, if private property is to be considered the basis of the kind of risk that the enterpriser undergoes, the theory of profits is limited. According to this theory, the abolition of private property in the instruments of production, as under Socialism, would leave us no explanation for such a share in the social income.

In concluding this brief critique of the risk theory, it may be added that the discussion does not refer to the crude risk theory.

The refined risk theory means a risk that is peculiar to the function of the enterpriser. It means "business risk". This sort of risk excludes those hazards that are insurable and which the business man can hire others to bear for him. It also excludes such risks as are borne by laborers and capitalists, the risk to life and limb and health, and to the replacement of one's principal.

(2) *Unearned or Scarcity Profits*. Set over against the theories of profits which regard this share as being justified by a service performed and by costs borne, are certain theories which attribute the existence of profits entirely to the scarcity of certain elements in production which enables those elements to secure an income, even though that income is not earned. Such a theory may recognize some function in the nature of enterprise. It may even admit that the share called profits is a permanent part of the social income. The scarcity theory, however, holds either that profits *depend upon the natural scarcity of certain abilities which, like land, enable the owner thereof to demand an income independent of effort or cost; or that they depend upon some artificial scarcity, such as a legal monopoly*. The idea does not necessarily involve an attack upon profits as being anti-social, but it does involve a lack of defense for the profit receiver as being one who is in all senses worthy of his hire.

Under this head we have what may be briefly called rent theories and monopoly theories, as follows:

(a) *Profits as a rent of natural ability*. The American economist, F. A. Walker, was notable for his theory of profits as being a differential based upon different natural abilities. He held that the natural original talents of individuals differ, and that the natural scarcity of these higher abilities which are required to make profits, enables them to command a sort of rent. Of course, this concept leads to the existence of a no-profit margin of production, where the prices of products are determined, and thus assumes that prices are determined without the inclusion of profits. In short, according to this theory, profits appear to be price-determined. It is assumed that all the enterprisers will stay in business as long as their sales exceed their expenses by an amount sufficient to be attractive to

them—say, an amount at least sufficient to give them the wages which they could earn as laborers.

More recently, others have held similar theories, as for example, the German economist, A. Lampe, who holds that profits can exist in a static state, since they are similar to land rent and are explained by personal or material advantages that are above average, which are enjoyed by certain enterprisers.⁴

B. Lavergne holds that enterprisers are able to secure the means of production on equal terms, and that profits are differentials which result from the different incomes which they acquire according to their various business abilities.

While there are unquestionably differentials in profits, as there are in other shares, the real question concerns the existence of a no-profit margin. In other words, can it be assumed that any individual who acts as an enterpriser will continue to function in that capacity without the receipt of some net profits over a reasonable period of time? ⁵ The differential-ability theory throws no light, except upon *differences*. But differences in what? It does not necessarily involve any understanding of the peculiar sort of ability which characterizes enterprise. In short, it does not explain the *function* of the enterpriser. At the very least, therefore, we must admit that it leaves us in doubt as to the possibility that there may be no profits at the margin of production.

(b) The other theory which makes profits depend upon scarcity, and exist without being earned in any social sense, may be called *the monopoly theory*. By this, we do not mean that the holders of such a theory believe that profits are the result of exploitation, or even that they are socially undesirable. For example, the French economist, Adolf Landry, argues that enterprise is really a sort of monopoly which, under certain social conditions, arises from the relatively rare combination of capital and administrative ability in the hands of a single person. Similarly, C. Gide holds that profits are a monopoly surplus which varies according to the degree of

⁴ "Theorie der Vertheilung", *Zeitsch. f.d. Ges. Statswis.* (1912).

⁵ If it be argued that some enterprisers would remain and "play the game"—that not all must win prizes—the position is merely shifted to a chance or luck theory.

monopoly advantage which the enterpriser may have in the shape of patents or land or natural abilities.⁶

Perhaps the theory that the major factor in profits is the "waiting power" of the enterpriser, together with the urgency of demand and the scarcity, should be mentioned here. Concerning this theory, we note that to be efficient and effective, "waiting power" must be guided by ability to organize and direct and bear uncertain business risks.⁷

(c) From the monopoly theories, it is easy to pass to the *exploitation theories*, which hold that profits are anti-social. Of course, profits, according to such theories, are not earned; and in this they resemble the preceding group of theories. The essential point, however, is that the exploitation theories imply that the profits are not only unnecessary, but are also undesirable, and imply that the conditions which give rise to them can be and should be abolished. For example, the Italian, Loria, holds what may be called a monopoly theory of profits, but his argument is that the enterprisers seize the means of production, and by combination exact from society profits which are in proportion to their monopolistic powers. Even more socialistic, in emphasizing the claim that profits come from the exploitation of labor, are the theories of B. Moll.⁸

2. "Dynamic" Theories of Profits

It should be noted at once that the so-called dynamic theories of profits do not necessarily rely upon any accurate understanding of what the term "dynamic" means.⁹ Generally, the idea underlying them is that profits depend upon the imperfection of competition and upon the resulting disequilibrium. Always there is the implication that profits are unnecessary and probably temporary. The assumption is that they are tending to disappear. Perhaps the most general way to characterize the so-called dynamic theories is to say

⁶ See *Cours d'Economie Politique* (1913), Bk. III, part II, Ch. iv. Gide does not appear to be entirely consistent in his profits theory, and his writings also contain suggestions of the differential, or rent theory.

⁷ S. Lorentz, *Die Entstehung des Unternehmersgewinn* (1937).

⁸ "Diskrepanz zwischen Leistung u. Einkommen", *Zeitsch. f.d. Ges. Statswis.* (1926); "Unternehmers Gewinn u. Arbeitslohn", *Ibid.* (1928).

⁹ See above, pp. 69ff.

that they make profits depend upon the existence of abnormal changes in business conditions, though not necessarily changes of a qualitative sort.

(1) Dynamic theories which hold that, though they are temporary and tending to disappear, as long as profits exist they are *earned* and justified by service.

(a) *Marginal-productivity theories.* Here we come to a very influential group of profits theories which center around the thought of J. B. Clark, and find expression in the works of Seligman, Seager, Bye, and F. H. Knight. In brief outline, the thought is as follows: Profits are due to changes or so-called dynamic conditions, such changes including price fluctuations, new inventions, and business cycles. These changes are apparently assumed to be abnormal, since they are regarded as being conditions which tend to disappear. What the enterpriser does, is to coordinate labor and capital (the members of this group of thinkers often include land under the head of capital), and thus increase production. The distinguishing feature of their thought, however, lies in their assumption that it is only economic "friction", or the imperfection of competition, that allows the enterpriser to benefit by the increased production to which he contributes. It is only the condition of dynamic change, which enables him to *retain* any share in the increased production. The reasoning is that, under competition, prices will be so adjusted that there will be no surplus over and above wages and interest. Obviously, this implies but a half-hearted support of the enterpriser's claim to be a producer, and seems to place the importance of his services on a lower level than those supplied by the laborer and the capitalist.

(b) *Imperfect competition theory.* The drift of this "dynamic" theory has become more clearly apparent during the last decade or two, and it stands clearly revealed in the thought of R. T. Bye and F. H. Knight. For example, in his *Principles of Economics*, Bye appears to come to the conclusion finally that the amount of profits varies with the degree of imperfection of the competition; and F. H. Knight says "aberrations of actual economic conditions from the theoretical consequences or tendencies of the more general price

forces which tend to eliminate them (profits)" are the source of profits.¹⁰

This tendency to make the existence of profits depend upon the imperfection of competition, and thus to treat the amount of profits as being determined by the degree of imperfection in competition, appears to make any complete explanation of profits quite impossible. In the first place, the degree of the imperfection of competition throws little light upon the motivation of the enterpriser, and none upon his abilities to take advantage of the situations which present themselves as a result of such imperfection.

In the second place, the imperfection of competition does not explain why there is any income which must be classed as profits, nor why there must be anything for the enterpriser even if competition be very imperfect. If we grant that competition is imperfect and that it must always be so, we still have to explain the existence of profits *in terms of some function exercised by the profit receiver*. But if we make profits depend upon the skill of the enterpriser in dealing with conditions under imperfect competition, we then have a theory the essence of which is not imperfect competition, but some sort of entrepreneurial ability.

Finally, the author knows of no factual evidence to the effect that profits actually do vary in the same direction as the degree of imperfection in competition.

As one examines the theories of J. B. Clark and his followers, the question arises, is their thought about profits really not based upon the assumption of a residual-claimant position for the enterpriser? Thus Clark's static marginal-productivity theory applies only to labor and capital. Then under "dynamic" conditions, something in addition to wages and interest comes into existence, which is appropriated by the enterpriser—though not by any sinister exploitation. This all smacks of the residual analysis. The enterpriser does not merely find his profit, however; he contributes to its existence by his activities. Thus one must conclude that, while we do not find here any positive, causal explanation of profits, nor a theory which makes the size of profits depend entirely on the function of

¹⁰ Article on "Profits" in *Encyclopedia of the Social Sciences*.

the enterpriser, we do not find a mere negative, residual-claimant theory. It must be admitted that marginal productivity gives us one element for a partial explanation of profits under certain conditions, and to that extent it is positive.

(2) Probably there are theories of profits that make the share depend upon so-called dynamic conditions, but do not allow any social productivity to the functioning of the enterpriser. Such theories would be *dynamic theories of profits as an unearned share*. The concept of the enterpriser as an exploiter whose exploitation exists only under conditions of imperfect competition, would fall under this classification.¹¹

Here, too, may be placed any theories which regard the so-called dynamic changes as matters of pure chance, and thus regard profits as being a share which in the long run is offset by losses, so that it does not exist as a net sum over a period of time.

II. POSITIVE THEORY OF COMPETITIVE PROFITS

A. *Nature and Functions of Enterprise*

One point which stands out very clearly as a result of the preceding classification of profit theories, is the need of a thorough-going analysis of the function performed by the enterpriser. Only through a careful understanding of that function can we know whether it is possible to explain profits as being distinct from other shares in Distribution, and at the same time to ascertain whether they are a positive net addition to other forms of social income. By definition, profits are the share of social income which is attributable to enterprise, as such, and which tends to equal the value of the service performed by the enterpriser. Clearly, then, the nature of the enterpriser's function is crucial.

In view of the history and present position of profit theories, it is well to begin this phase of the discussion by emphasizing the fact that "personal distribution" is not under consideration. It makes no difference to the economist *who* performs acts of enterprise or *who* receives profits. The question, as already stated, is

¹¹ Cf. above, p. 635f.

purely one of function—what is done? What is necessary to insure that enterprise will be forthcoming? Thus one may easily waste time by going into detail as to *who* is the enterpriser in this concrete case or that. To the theorist, the essential point is to isolate the criteria of enterprise; not to become familiar with the details of various cases for the sake of being able to make practical applications.¹²

1. Technological and Economic Aspects

One who is familiar with business practice as well as economic theory, sees in the function of the enterpriser both technological and economic aspects. The former, however, are too little discussed in most treatments of the subject.

The technological aspect of enterprise is an essential one.¹³ The enterpriser must work through, and therefore understand, the working of the technical processes of production, including market mechanisms. Probably, he must understand something of the qualities and technical functions of goods, both producers' goods and consumers' goods. For example, he often needs to know a good deal about the labor problem. The fundamental point, however, is that he must know the technique of markets, for it is in dealing directly with market forces that the characteristic field of business proper lies. The essence of business lies in buying and selling, or exchange.

¹² In the author's experience two main sorts of question arise: (1) Is this individual an enterpriser? (2) Who is the enterpriser in this organization? The first question is illustrated by the land-owning farmer, or the corporation president; the second question, by a large business corporation, or by a government. In both cases, there is enterprise, but considerable knowledge of the particular circumstances may be required to determine precisely *who* performs the function, and *how much* of the total function he performs. It is sufficient for present purposes to point out that the land-owning and working farmer is laborer, capitalist, land-owner, and enterpriser; that the corporation president, if hired and working for a salary, is primarily a laborer (manager), although he may participate in both enterprise and capital; that at law the direction of a corporate enterprise is the responsibility of the equity holders, usually the common-stock holders, who usually delegate their powers to directors; and that to the extent that government owns and operates business units, the state is an enterpriser, the locus of the enterprise function depending upon whether the government is a democracy or an autocracy, etc., etc.

¹³ See A. W. Shaw, *An Approach to Business Problems* (1916), Chaps. I, II, VII, XVIII, XIX.

Perhaps the meaning of this technological side of enterprise is made clearer when one recalls that one of the grounds of success in business may lie in the enterpriser's superior knowledge of circumstances and values as compared with the knowledge of laborers, investors, and land-owners whose services he uses.¹⁴

In this connection, too, the importance of finance is to be noted. It is probably true today that control over the finances of a business unit is the aspect of business which is the most essential to the exercise of the entrepreneurial function.

Not only are market phenomena important as a matter of technology, but also they are important from the purely economic standpoint; because, in the last analysis, exchange reduces to terms of barter, and to objective values. When we get down to fundamentals, we find that goods exchange for goods, and we then readily realize that exchange is a part of production. Thus if we look upon the enterpriser as intimately concerned with marketing, we must also look upon him as concerned with production. The enterpriser, as such, is not an exploiter or a predatory individual. He need not be merely acquisitive. There is no need to regard him as lacking in the positive qualities of service to society which are possessed by those who make important net additions to the "real" social income.

The economic aspects of enterprise lie in the *potentiality* of the enterpriser to function so as to increase the net income of society, and in the *tendency* actually so to function. The test here must be one of social productivity. If this test is to be met, the enterpriser must direct his enterprise to the production of things which consumers regard as important, and be guided by economic values which take into consideration both utility and scarcity.

If economic analysis shows that the function of the enterpriser has the technological and economic qualities which fit it to play a positive and productive part in the economic life of society, the theory of profits will not be dependent upon the assumption either of some existing social order or of some system of private property rights. Nor will that theory depend upon the assumption of such

¹⁴ This idea, however, should not be pushed so far as to lead to a so-called bargaining theory of profits.

temporary conditions as imperfect competition or certain kinds of change. Least of all will it be dependent upon chance.

2. Elemental and Essential Nature of Enterprise

One way to demonstrate the elemental essentiality of enterprise, and its independence of particular social institutions, is to take the case of an isolated individual, say our old friend, Robinson Crusoe. If it be assumed that such an individual has the materials which he requires for existence, and the energy required for labor, he may make the simple tools which are required to aid his labor, and we can then visualize him as prepared to make a living. What remains? What is lacking in the picture?

At once, one reflects that even this isolated individual will have several wants, and one may well wonder which will be gratified first, and in what degree. We see here in rudimentary form the problems of "demand" as they exist in the markets of our complex business world. And just as business men in markets must decide what the demand is, and which of several demands it will be most profitable to cater to, so Robinson Crusoe must decide for the total population in his own little economic world.

Then there is the question of what disposition he is to make of his small resources. In what way will it be wisest for him to proceed to do the things which he decides upon?

In short, he must determine *what is worth while*. What is best to do with his available time and energy? What are the best methods? In such decisions are found the bases of all economic values. Crusoe, in his capacity as enterpriser, must decide what Crusoe will do in his capacity as laborer! This is an ultimate responsibility; no one else can do it for him.

And as to the reward? Obviously, in this case there could be no reward separate from such reward as he secures for his laboring and his saving. His income is a single stream. But a somewhat better living results for him if he "uses his head" as well as his hands, and this somewhat better living may be thought of as being the difference between a total income which contains profits and one which does not.

Or one may consider what must go on in some totalitarian state where a centralized system of "social planning" is carried out by dictatorial authority. Here, again, one finds that some one must decide what it is worth while for the labor army to do. Some one must decide what saving should be done (perhaps through taxation) in order that the desired capital equipment may be available. The difference in results attained under two different dictators will be some measure of the skillfulness of their schemes of social planning, and the difference may well be thought of as a sort of profit.

Perhaps the frequency of the differential theory of profits is explained by the ease with which one realizes the existence of the entrepreneurial function and visualizes profits, when one compares two situations which differ only with respect to enterprise. Therefore, without the adoption of any such theory, let it be assumed that there are two different Crusoes who have practically the same resources, strength, labor skill, and capital equipment. Let it be assumed further that no changes are going on in their economic environments. Of course, there is no competition, since each is operating on a separate island; and therefore there is no imperfection of competition to explain the difference in the results which they obtain. The point is that there will be a difference in their results, and that this will represent a difference in their productivities. An observer might say that Crusoe A has more judgment or common sense than has Crusoe B. He would point to the fact that one wastes his time or his energy; or perhaps that he does not count his costs. Perhaps the difference may lie in the degree to which the two anticipate their wants, and adjust their expenditures of time and energy with relation to their wants. One is superior to the other in recognizing the opportunities which his environment presents.

Again, we see in rudimentary form the question of judging demand-and-supply conditions, which involves directing production with relation to costs and utilities in such a way that economic valuations control. The answer to this question is profit—or a loss.

The problem of enterprise is the problem of determining what activity is economically worth while.

3. Enterprise as Choices and Decisions Made in Organizing and Directing Business

The function of the enterpriser involves a decision as to what shall be produced, how much of it shall be produced, when and where the production shall take place, and under what conditions it shall be offered for sale. Not only that; it involves numerous questions as to how the production shall be effected, or what means shall be used to the given end. It involves questions of proportion among the agents of production. Then, too, there is the question of how to secure the desired agents, which brings in problems of finance. And, having secured the agents, how shall they be organized? What means of motivating them through rewards or penalties shall be used? What price and marketing policies shall be adopted?

Thus we may distinguish three different phases of enterprise, or three different types of enterpriser: (1) The promoter, who sees opportunities and initiates business enterprise; (2) the organizer, who sees to it that the factors of production are combined in the proportion that seems most productive; (3) the director, who decides what the organization shall do—its operating and sales policies, prices, etc. "Financing" may either be regarded as a fourth phase, or it may be put with organizing.

Perhaps there is some danger here of saying obvious things. At the risk of being trite, however, the author would add a bare mention of several decisions involved in the enterpriser's function, which are not so generally referred to. For example, there is the question as to when to scrap "*old capital*". When funds are tied up in capital goods, it is often found that such goods become obsolete, and then it is the enterpriser who is confronted by the acute problem as to whether to hold the old equipment through to the end of its normal life period, attempting to accumulate such replacement funds as might be possible, or whether to scrap it promptly and adopt the latest and most productive devices. The one who bears the responsibility for such a decision, must be the enterpriser.

Then there is the question as to whether it is better to *own the*

land and capital used, or to operate by hiring or renting them. Two businesses in the same line may operate very differently in this respect, one having a small investment in plant and equipment, with large expenses for rent and interest paid, while the other has large investment in the items mentioned, with proportionately small expenses on these accounts. The difference depends upon an entrepreneurial decision.

*The Size of the Business Unit.*¹⁵ The *scale* of business that is to be attained, is often an important problem of enterprise. An unwise enterpriser, guided by ambition, love of display, or some other non-economic motive, may expand beyond his powers of organization and direction. Many failures are traceable to such action. The wise enterpriser recognizes his own limitations or the limitations of any form of organization for direction which he may be able to establish. He considers both economic and technological conditions, such as the nature of the materials and processes used, the product, the scope and character of the market, the advantages of combination, and other conditions which affect the size of the business unit. Consciously or unconsciously, he must recognize that the problem of large-scale business is a part of the problem of determining the most productive proportion among the factors of production, which in turn is a part of the problem of diminishing productivity.¹⁶ In this case, the question is, How much enterprise shall be combined with the other factors?

Unfortunately, there is a tendency to separate the problem of the *size* of a business from the problem of *proportion* among factors of production.¹⁷ Of course, there are problems which pertain to the size of the business unit in an absolute sense. There are problems of monopoly. There are problems of political relationship. These, however, may not be problems of economic theory. At least, the main problem of economic theory is that of a relation or proportion among the factors of production, as this affects efficiency and the relation between cost and utility in production. Considered in this

¹⁵ Cf. L. H. Haney, *Business Organization and Combination* (1934), Chap. II; see above, p. 27f.

¹⁶ See above, pp. 119ff.

¹⁷ E.g., see Carver, *Distribution of Wealth*, pp. 90-93.

way, enterprise is merely one of four factors. As to enterprise, a large-scale business is not necessarily one which has a large amount of capital or a large number of employees. It may be one which embraces so much of these other factors that no ordinary form of business organization or enterprise can organize and direct them with maximum efficiency. It is one in which diminishing productivity occurs as a result of conditions such that the quantities of land, labor, or capital have become so large *relatively to the quantity of enterprise*, that the profit earned per unit of product has begun to decline. A business begins to get too big when it gets too big for effective direction by any known means of applying entrepreneurial ability.

Finally, there is the broad economic question as to *the proportion of labor which is to be used in making capital goods, as against the labor which is to be used for making consumers' goods*. This is one of the most difficult problems of the modern economy. Probably, too, it is one of the most difficult problems for the individual enterpriser. It may come home to him in the shape of the problem of buying machinery, and floating new securities for that purpose; or again, in the problem of expanding his labor force in some "capital goods industry". Or the obverse side of the problem arises when decisions must be made concerning policies with reference to consumer goods and the "purchasing power" of consumers.

From the standpoint of Production, it may be said that it is an essential part of the enterpriser's function to see that land, labor, and capital are economically used, and directed towards economic ends. Thus enterprise affects the margin of production. This is the most general way of stating that, through enterprise, we arrive at a tendency to provide all the goods and services which, in the given society and at the given time, are economically worth while. (Worthwhileness, as an objective phenomenon, is a matter of the determination of value, which has already been discussed at considerable length.)

It follows that, in any exchange economy, enterprise centers in objective values, and that usually it is in such values that the enterpriser is immediately interested. In fact, we may say that *enterprise*

exists whenever in the process of production a choice is made. These choices include at least the following:

(a) *A choice among the indirect means of gratifying wants.* In any exchange economy, there is a law of substitution which works through the enterpriser, and according to which he tends to combine the factors of production in the most productive proportion. These factors of production are the "indirect means" just referred to, and the law of substitution involves a choice among, or valuation of, such means.

(b) *Enterprise also involves a choice among products or finished goods, wherever there are substitutes.* In an exchange economy, the enterpriser seeks to supply those goods which are regarded as most important by the members of the economy in their capacity as consumers. But in this connection, it should ever be borne in mind that he also has to consider costs; since costs are reflected in the expenses which he has to incur, as well as in his own efforts and sacrifices, and are a part of the equation which he must deal with in determining which of two products is more worth while.

The long and short of it is that business is buying and selling for gain, and that the function of enterprise is to buy and sell for gain, including the organizing and directing of the other factors of production. (This function must be performed with due regard for the long-run and general results, according to a realistic social point of view.) Profits, therefore, depend upon the skill or efficiency with which this function is performed.

Certainly, thus regarded in the light of the realities of our economic life, the function of enterprise cannot be reduced to terms of labor or capital. Labor, as such, works merely to create utility. The laborer works to gratify mere wants, and often without much regard to the relative importance of such wants or the market value of the product. He works without knowledge of all the costs, it being no business of the laborer, as such, to be concerned about saving or business risks. The laborer, as such, merely does the "work" that is necessary to get the desired result. Perhaps not infrequently, there is mixed with the labor of the laborer some work done for work's sake. Not infrequently, too, some work is done as

an outlet for surplus energy. But when it comes to working for others or making things for sale, there is little chance for quibbling about the generalization. Then something more than mere labor is required. Whenever production is carried on as it is in the modern exchange economy, there must be something more than mere labor, if the economy is not to become stalled for lack of coordination and direction through enterprise.

This is the answer to the problem of the "planned economy", as it confronted the world in the 1930's, particularly in those nations in which organized labor was politically predominant: namely, the inadequacy of the business enterprise supplied by political "leaders". Whether because of the mixture of ethical and political values with economic values, or because of irresponsibility, waste prevailed. Nations were brought to economic ruin by doing things which no individual or group enterprise would have found profitable.

This reference to political conditions serves to bring out the essential differences between Economics and Politics, and between business and government. In the "direction" of the business enterprise, there must normally be a large element of dictatorship. Business competition, like war, frequently requires prompt and decisive action to meet emergencies, and "cooperation" within a single business unit may be compulsory. Employees must act under orders. Indeed, successful enterprise is characteristically prompt and effective in action, even at the expense of occasional mistakes. But government exists for the sake of the governed, and functions primarily for their protection and security, even when it also exercises control over their economic lives. Accordingly, government operation, even when the government is autocratic, mixes business with all sorts of political considerations; and when it is democratic, it is fatally handicapped as a business enterpriser by slow indecisive procedure. However much one may wish it were different, democratic government cannot possibly be efficient as a business man.

4. Enterprise as Ability in Taking Business Risks

Thus far, this analysis of the function of enterprise has led to an emphasis of the choices and decisions made in the process of

organizing and directing business; in other words, to the positive aspects of the function, and the immediate basis of its "productivity". There is another aspect, however, namely the nature of the risk necessarily attached to enterprise. From the standpoint of the typical enterpriser, this risk is a negative factor, and in his motivation it acts as a "cost"; but from the standpoint of society, the risk-taking phase of enterprise is a service, and the enterpriser's special ability in risk-taking is one basis of profits. This risk, which is the non-insurable hazard of business, will be discussed in the subsequent theory of the determination of profits, when its uncertainty will be emphasized. Here, the special ability of enterprisers to bear the risk of business, is the point.

One of the most difficult feats for an individual to perform is to function effectively in business, once he has made commitments or taken a position in matters which require further choices and decisions. Sometimes obstinacy or pride of opinion leads him to continue his course even when it tends toward losses. Sometimes worry or fear of loss so influences his motivation that his actions are affected, and he sells or buys when he should not. Sometimes hope or greed lure him to hold or extend an unsound position. The point to be stressed is that few men, after they have "taken a position", have the ability to function without bias, and particularly so when hazards are known to be involved. Worry is apt to warp the judgment.

In short, *successful* risk-taking in business requires a special sort of ability or skill. Whether this be thought of as reducing the business risk, or as overcoming it—as removing an obstacle, or as surmounting it—this ability is the basis for one of the services rendered by enterprise.¹⁸

¹⁸ The "worry cost" of enterprise is doubtless similar to the "worry cost" of the highly paid business executive, such as a corporation president. Indeed, it should be recognized that the professional president of today sometimes exercises some of the functions of an enterpriser. If his "salary" is in reality contingent upon the success of the business, it may actually be profits, at least in part. The test lies in the executive's power to decide, and in his responsibility for decisions.

5. General Relation Between Enterprise and Profits

The upshot of this discussion of the function of enterprise, with its emphasis on the problem of what is economically worth while and of the part played by the enterpriser in the determination of objective values, is this: There is a direct relation between the activity of enterprise and its reward in the shape of profits, and the directness of this relationship is characteristic. It means responsibility for results. It means that enterprise proper cannot be hired, since there is no market for such services.¹⁹ It means that enterprise cannot be insured, since it is not a matter of chance.

These conditions make the problem of determining profits, or the reward of enterprise, a peculiar one. Particularly, they involve a characteristic difficulty in measuring the relation between the function and the result. Enterprise usually hires other agents and pays them, which makes proportionality among them easier to see and to understand, especially when one is substituted for the other. As already noted, however, no one hires the enterpriser, and there is no one to supervise the proportion between enterprise and the other factors of production.

Furthermore, the enterpriser may hire "managers" who, at first glance, appear to be able to perform his functions, although working for a salary which is probably on the average less than the enterpriser's profits. This condition tends to confuse the observer, and lends plausibility to the assumption of an essential interrelation between labor and enterprise.²⁰

These peculiarities, however, are but the earmarks of the essential distinctness of the function of enterprise. It is its function to insure the value of the products of labor and capital, and the sign of success in the performance of this function is found in the value

¹⁹ "Management" can be hired. Individuals can be hired to make decisions for enterprisers, just as the President of a nation may hire men to write his speeches and state papers. But in such cases, the responsibility remains with the real enterpriser, and cannot be assumed by the one who writes the speeches or makes the immediate decisions. These are subject to the approval of the real President or enterpriser.

²⁰ On these matters refer to Edgeworth, "The Theory of Distribution", *Q.J.E.*, Vol. XVIII, p. 159.

of the contribution made by enterprise itself, as expressed in profits. Enterprise sells things that consumers are willing to pay for, and for which they are willing to pay more than the total of the supply prices which enterprise may have to pay for the other producers' goods which are required in production. (Thus the profit is measured as a residual difference, but the function is to produce and maintain this difference.) *As consumers, those who furnish the other agents of production pay enterprisers for organizing and directing them as producers.* As producers, laborers and savers and land owners allow themselves, as it were, to be coordinated in production by the enterpriser; and then, as consumers, they pay the enterpriser for consumers' goods at prices high enough to contribute his reward, profits. In that sense, society pays enterprise for being a sort of social paymaster.

6. Evolution of Enterprise

In the foregoing discussion, the existence of an exchange economy has been emphasized. Rudimentary forms of enterprise have been referred to as existing in the simplest form of independent domestic economy; but only since exchange economy developed has enterprise become a distinct factor, and profits a separate share in the social income. In the simpler economy, production was for use, and therefore profits were not separable. Now, however, production is almost universally for exchange, and there has come a greater multiplicity and wider range of choices or valuations. Accordingly, more problems exist, and greater hazard and responsibility fall upon those who are called upon to make decisions. Men and geographical sections are more specialized. Wider areas are embraced in markets; larger masses of capital and armies of labor are directed; longer periods of time must elapse. Productive processes are more indirect, with numerous stages to go through. The problems of finance and the complex mechanisms of credit, have greatly increased. Incidentally, too, a broader social point of view is required on the part of those who conduct enterprise—one which must, perforce, include some recognition of the importance of the health and purchasing power of laborers, and the interest of consumers in

general. In short, the problem of determining what is worth while in the way of an adjustment between production and consumption, has become extremely difficult and risky. Thus it requires a high degree of specialized ability.

Specialization requires exchange; exchange is business;²¹ business requires business men, or enterprisers.

At the same time, profits become separable, since the enterpriser buys labor, capital, land and materials, while he sells finished products. Necessarily, therefore, income and outgo pass through his hands, and these and the balances, if any, appear in "profit and loss statements",—insofar as the business point of view reflects social utilities and costs.

7. Relation Between Enterprise and Capital

Perhaps this is the point at which to refer to the relation between enterprise and capital. Not a few economists have professed to see in this relation something fundamental and subtle, and containing within itself the essence of enterprise. Historically and as a matter of expediency, it is unquestionable that enterprise has been closely related to capital. Logically and fundamentally, however, it is quite possible that enterprise might be more closely related to labor than to capital. Indeed, such is the case in "productive cooperation", which may be defined as a union between labor and enterprise.

Doubtless, in the beginning, the man who desired to undertake a business venture had to have capital, and the only way he could get it was to save and produce it himself. More recently, however, it seems that the continued close relationship between enterprise and capital has been based more largely upon expediency than upon necessity. The possession of capital—not necessarily the ownership of it—involves only an impersonal relationship, while if the enterpriser were to be tied up with labor, intensely personal, and therefore difficult, relationships would develop. (Indeed, these are actually a part of the weakness of productive cooperation.) Prob-

²¹ Note that the organization of a business involves purchase of the services of labor, land, and capital. (One aspect of specialization is seen when an individual becomes entirely a laborer, or a land owner, or an investor.)

ably, too, capital is more mobile than labor, and certainly is more so than land. It can be more highly concentrated. Above all, however, is the fact that capital is more controllable and more readily transferable than the other agents. A large part of the story is probably told when it is said that capital is the factor which is most subject to business control.

8. Enterprise and the Corporation

The relation between enterprise and capital suggests the problem presented by the different methods and forms of financing the modern business enterprise, and organizing it for direction. It does not seem appropriate or necessary to consider the ways in which, mergers, holding companies, and the like, affect the functioning of enterprise.²² One need merely note that enterprise lies in the body of voting stockholders who are represented by a board of directors or similar group. For the rest, attention is to be called to the way in which the different interests of the various groups of investors who supply funds to the corporation, may confuse the functioning of enterprise. We have to distinguish between equities and mortgages, between stocks and bonds, between speculation and investment. It is highly unfortunate that the forms of securities used in financing corporations have become so ill-adjusted to the economic functions performed by the various classes of security holders. For example, anyone can buy a right to participate in the profits of a corporation, and he can do so without contributing a jot or a tittle to the direction of the said enterprise. In short, the most ignorant and irresponsible person imaginable may buy a share of stock in any enterprise which catches his fancy. It is highly desirable, however, that the function performed by anyone connected with a business organization be correlated with the rights and duties which he undertakes in that connection, and the type of security should be adjusted so as to allow and establish such a correlation. At the least, there should be a chance for the investor to be a mere contributor of capital, pure and simple; while the equity holder should

²² These matters have been treated at length by the author in his *Business Organization and Combination* (3rd ed., 1934).

be concerned directly with the risks of business enterprise.²³ The former should receive interest; the latter should receive profits (or losses).

This subject brings up one of the most important aspects of the present-day corporation problem. One criticism of "business" is that those who decide the affairs of the corporations do not assume proportionate responsibility; and this criticism is justified in part, at least, by the separation of management from ownership. It is also due to the fact that stockholders are called "investors", which means in practice that they fall between the two stools of enterprise and capital. If the directors of a corporation can not be elected by "the public", those who are stockholders, in a way that allows them as stockholders really to participate in the direction of the business, it is difficult to see why they should be allowed to have "common stock" which gives them merely an equity in the uncertain profits of a business enterprise. Should they not logically be given some form of security which would recognize their incapacity for direction, and allow them to receive the relatively safe income which we think of as interest on invested capital?

One of the great contributions which economic science can make to economic welfare, is to present such a fundamental analysis of the functions and motivation of the several agents of production that business organization may be adjusted and regulated so as to facilitate simplicity of functioning and directness of motivation, thus reducing losses through friction, and maximizing net product.

To illustrate the analysis thus suggested, one might imagine a corporate business unit in which the capital structure and form of securities, or other indications of participation in the enterprise, would be arranged as follows: (1) Real estate mortgage bonds to serve as the basis of distributing any economic "rent" involved in the income of the business. (2) Capital goods mortgage bonds to provide for the distribution of the economic "interest" element in the corporation's income, said bonds being secured by plant, equip-

²³ Of course, the mere "speculator" would find opportunities for trading in any kind of security, making gains or losses by fluctuations in prices of stocks or bonds.

ment, etc. (3) Common stock certificates—having the voting power, of course—held by persons who desire to participate in the direction and risk of the business enterprise, and who would receive any “profits” which might be earned, as distinguished from interest or rent. (In addition, there would also be the wages of labor.)

B. The Determination of Profits

1. Demand

The way in which the demand for enterprise works, differs somewhat from the functioning of the demand for the other factors. As already noted, there is no “market” for enterprise, in the sense that there are buyers to bid for it specifically, and sellers to offer it at a price. Nevertheless, in a social sense, there is a demand for enterprise—it is required in production, and those who bid for products are unconsciously bidding for entrepreneurial ability. As has been found true of all the agents of production, the basis for enterprise lies in the demand-intensity schedule for the products to which enterprise contributes. It is a matter of a series of bids, or demand prices, for semi-finished or finished goods. These matters have been discussed in preceding chapters, in dealing with the demand side of the determination of value.

The problem of determining the proportions in which labor, land, and capital are combined in production, has been dealt with; for this is essential to an understanding of the joint determination of the values of the respective services of those factors. Can it now be said merely that there is a residuum left after certain proportions of the total demand intensity are allocated to labor, land, and capital, and that this residuum represents the demand for enterprise? Obviously not. That would leave unanswered the questions, Why is there any demand for enterprise? Why is there any residuum? Why need enterprise receive the whole of any residuum?

To begin with, then, the demand for enterprise will tend to vary with the contribution which enterprise is able to make to the net product of any business unit. This net product may be affected by enterprise either (1) by increasing the product, while the quan-

tity of the other factors of production used remains unchanged, or (2) by decreasing the quantity of the factors of production required to yield a given product. By efficient promotion, organization, or direction of business units, or by all these methods, the enterpriser makes a place for himself in the social economy. Here we find the basis of the demand for his services. This aspect of the demand is associated with an increase in the efficiency with which all of the various agents of production are used.

If there were nothing more specific to be said, however, the joint aspect of demand would be almost overwhelming, not only in practice but in theory. Thus it appears to be especially necessary to deal with the determination of that proportion of the demand intensity for the product²⁴ which is specifically focussed upon enterprise. We must explain the proportion of the total demand for the product which becomes effective as one element in determining the value of entrepreneurial service, in much the same way that the matter has been explained in the case of the other factors.²⁵ Of course, the physical necessities of the material and process, and the nature of the product, play their parts here. The relative abundance and technical efficiency of enterprise, as well as of the other factors, must be considered. And the attitudes of enterprisers as reflected in "supply prices" (subjective), may be important.

For example, in the case of some successful new product, which often involves an element of change and a great deal of uncertainty, the part played by the enterpriser is undoubtedly enhanced in importance, and we may say that the demand for his services is especially strong. Such cases of great "business risk" are frequent in what we are pleased to call a progressive state of society. Often they require heavy and shrewd outlays in advertising and selling. Then, too, both the size and the complexity of the business organization which may be required, have a direct bearing upon the demand for entrepreneurial ability, and these matters are affected by the materials, processes, and products that are concerned.²⁶

²⁴ Note that this is not the *value* or *price* of the product, but the marginal "demand price".

²⁵ E.g., cf. pp. 531-7, 590-5.

²⁶ Cf. above, p. 534-6.

Or, others things being equal, if the number of laborers and the quantity of investment funds or capital goods, are large relatively to the number of enterprisers available, it is probable that the technological aspects of production alone will result in a more intense demand for the services of enterprise. This is certainly true if the efficiency of the available enterprise is high, while that of the other factors is low. A scarcity of men who have the ability to initiate, organize, and direct business ventures, as compared with the quantities of labor and capital efficiency-units which exist, is a distinct element in explaining the proportion of the total demand for the product which becomes effective in determining the value of the enterpriser's service.

Finally, the relative supply intensities of the several factors, play their usual part in apportioning the joint demand. For example, when there are abundant, cheap capital goods and so-called "easy money", or cheap labor, or cheap land, there are apt to be good opportunities to start up in business, which is but another way of saying that the demand for enterprise is relatively strong. Such is often the case in an undeveloped new country.

More immediately, the demand for enterprise is influenced by the following: (1) the intensity of the consumers' demand for products, and (2) the amounts of labor and capital seeking employment, together with the attitudes of laborers and capitalists.

Probably it is the relation between these influences which explains the ordinary idea that profits are a residuum, or balance. *On the demand side* (i.e., the demand for enterprise), profits do immediately depend upon the spread between (1) the demand intensities for consumers' goods and (2) the supply intensities for producers' goods other than enterprise. (It is important to note that this statement does not run in terms of prices; the spread referred to is between demand intensities and supply intensities, or between "demand prices" and "supply prices", or between bids for products and offers of productive agents, whichever way one may care to express it.)

A distinct phase of the spreads or margins between demand for enterprise and supply of enterprise, is that which arises through *changes* in prices. The price of a product may rise so sharply that

the labor and capital in the industry cannot be adjusted to the situation in any short time, and thus there may arise an opportunity for wide profit margins, or at least wider ones. Immediately, these margins lie between two sets of prices. Ultimately, however, the wider spread between prices is to be explained by demand intensities for products and supply intensities for agents of production. The phenomena of the business cycle are of particular interest in this connection. One of the most frequent occurrences in such cycles has been the relatively rapid rise in prices of products as compared with the wages of labor. Furthermore, there may be secular trends in prices which result in gradually increasing spreads between the prices of products which enterprisers sell and the prices of producers' goods which they buy.

The foregoing statement suggests that, aside from price spreads between producers' goods and consumers' goods, there are changes in prices *from time to time* which may also represent conditions that affect profits. Thus, in the business cycle, as the price of a given product rises, the enterpriser who has bought it for sale often finds that he can dispose of the same product at a higher price than he would have required for his usual margin of profit. At such times, enterprisers come to anticipate speculative profits, depending upon an upward change in prices. And in the longer secular movements of prices, we have a more gradual but similar effect on profits.

New inventions, new tastes, new styles, and the like, play a part here. One effect of such developments is often the creation of an intense demand for a product which, being new, is relatively scarce. Another is the reduction of operating expenses, and presumably of social costs, which allows some enterprisers to secure temporarily increased profits by the sale of their products at the same prices secured by others who do not participate in the new economies.

There is the utmost danger in all this sort of discussion of the factors affecting profits, that the social scientist will be led to accept non-fundamental explanations, and to reason in circles. We cannot take the prices which enterprisers get for their products for granted, without virtually limiting our choice of explanations of profits,

since we thereby virtually serve notice that we do not regard profits as a necessary element in price determination. In the foregoing discussion of price spreads and cyclical phenomena, therefore, it should be noticed that we do not say that *profits* depend upon price spreads or price changes; we do not say that *profits* are determined by these things. (The prices merely represent the conditions of demand-and-supply-forces which determine them, among which conditions is the supply and productivity of enterprise.) Thus far we are treating merely of the *demand* for enterprise; not its supply or its value. Our only point is that these varying price spreads among different products, or price fluctuations in a given product, are manifestations of changes in the relation between (1) demand intensities of products and (2) supply intensities of factors of production, which in turn become an element in determining the demand for enterprise.

There is, however, this peculiarity about the demand for enterprise: There is no special market for the services of the enterpriser. In other words, there are no individual buyers of enterprise, and no separate demand schedules. The demand for enterprise is a sort of social demand in a very special sense. This means that there is a peculiarly direct relation between the demand for enterprise and the market for the products to which enterprise contributes. The social demand for business ability is, after all, the same thing as the chances to "make money" (profits), insofar as these are not anti-social; that is, it is a chance to sell goods for more than enough to induce labor and capital to function. Again, we come to close grips with the significance of the saying that the entrepreneur is the social paymaster. The demand for his services lies in his own ability to increase the productivity of the other agents, when used in combination; which means that he knows what is worth while for them to do jointly, in the sense that he is able so to direct production that products are worth more than they cost.

Thus considered, it is easy to understand why, at times, doubts arise concerning the fairness of profits or even the "profits system". The enterpriser is often difficult to distinguish as a separate agent, and his services seem more intangible than those of other factors.

Profits seem to come out of wages or interest. They are not subject to contractual arrangements or bargaining. They are not correlated with any sacrifices, which are directly associated with time or energy, as are labor and capital. They are apt to fluctuate widely, and at times to be very large. Superficially, therefore, it seems easier to get along without the enterpriser; and some one is apt to ask, Who wants his services? Where is the demand for them? It seems that heavy taxes on profits may be imposed without harm, or that prices of products may be fixed low while wages are raised. If the foregoing analysis is correct, however, the resulting injury to business and unemployment of labor and capital will show the productivity of enterprise, and arouse an appreciation of its importance which will demonstrate the social reality of the demand for it. Then, if the individuals who run "the government" do not happen to be efficient enterprisers as well as successful politicians, the doubts concerning the profits system may be reduced.

2. Supply

Under the head of supply, the procedure hitherto adopted will be followed, and first consideration will be given to "supply intensity", meaning the pressure felt by enterprisers to exercise their function, or the resistance thereto which they feel. Economics is concerned with the *attitudes and tendencies* of enterprisers toward initiating, organizing, and directing business ventures—the motivation to exercise entrepreneurial ability. A little later, attention will be given to the supply of enterprise in the sense of the quantity of entrepreneurial ability.

(1) *Subjective Worth of Enterprise.* The first point to mention is that each enterpriser attaches some valuation to his own services, which we may describe as a subjective worth. This valuation may be expressed in terms of the alternatives which the enterpriser has available. Thus he might labor as a salaried officer of a company, say as a manager. In this case, he would be loath to conduct a business enterprise independently if it did not bring him in at least as much profits as the sum which he would earn as a salaried man. Without any such alternative or comparison, however, the enter-

priser may have in mind his years of business experience and the record he has made, with the result that he would not be satisfied with conducting a business which could yield but a small profit. *Vice versa*, his experience and record might be such as to make him well satisfied with a peanut stand.

It is to be emphasized that the wage or salary alternative does not constitute a deadline. There are too many cases in which enterprisers accept profits which are less than they might earn as salaried men, to allow us to make that mistake. The prestige of independent business headship is often a potent factor in this situation. One mistake, however, that some economists make is to reason as if profits shade down into wages in one uniform series of rewards for homogeneous services. The position here taken is that there are important qualitative differences between labor and enterprise; and that, while men may shift from one function to the other, when they do so they pass from one economic market to another.

(2) *Costs and Expenses*. Enterprise involves a characteristic kind of irksome risk-bearing, inasmuch as the enterpriser must carry the non-insurable business hazards. The fact that business hazards which are insurable are nearly always insured, is virtual proof of two points: first, that men do not willingly undergo such hazards, and second, that the hazards which remain uninsured are uninsurable.

Probably the most distinct element in the entrepreneur's costs is to be described as "uncertainty".²⁷ *Business uncertainty means that the business man cannot foresee the risks he will run; accordingly, it means that he cannot insure against them.* He must assume a responsibility, the content of which he cannot anticipate with any precision. Certainly, uncertainty is irksome to most men. It is a very common observation in financial circles that securities are depressed when a condition of uncertainty exists, and frequently the thought is expressed that to have almost any certainty established would be better than to remain in complete doubt.

It is a fact of fairly common observation that responsibility tends

²⁷ F. H. Knight in his *Risk, Uncertainty, and Profit* has pointed out that, strictly speaking, it is uncertainty which is the essence of the business hazard which is borne by enterprise.

to be irksome to many men, and that the greater the responsibility becomes, the greater the mental strain which must be undergone by most men in assuming that responsibility. This often finds expression in a mental state which may be called "worry cost". Any one who has suffered from nervous indigestion or lain awake nights on account of some so-called business worry, will have a sufficiently definite idea of what is meant. Anyone of much experience in business will recall cases of men who have preferred to work for another rather than to assume the responsibilities of buying goods which they may not be able to dispose of profitably, of meeting the weekly payroll, and the like.

In common with the other factors of production, too, the enterpriser runs some more or less calculable *risks* in performing his function. The capitalist runs the risk of losing his capital; the laborer the risk of unemployment, and life and limb; the enterpriser the risk of business "failure". By such a failure, the enterpriser may lose his position as an enterpriser. He may lose his reputation as a successful business man, and his power to get possession of funds or otherwise to secure the factors of production which constitute a business enterprise. Incidentally, he may lose capital of his own or "wages of management" he has earned.

It follows, since the functioning of each of the factors of production involves some sort of risk-bearing, that risk in the general sense of the term,²⁸ is not the essential characteristic of the entrepreneurial function or of profits. It cannot be said that profits are determined by risk. It is true, however, that "business risks" are more uncertain, and more direct or primary, than are the other risks of loss which are borne by laborers, capitalists, or landowners, as such. Business risks depend upon conditions which pertain to the joint functioning of several agents of production. For example, they will vary with the industrial technique according to the amount of fixed and specialized capital goods, and the scale of operations which characterize the business unit. They may also vary according to the business technique as it affects the degree of association or combination

²⁸ That is, in the general sense of danger, or exposure to loss or injury of any sort.

among the competing business units in the given industry. Or finally, the risk may vary with market conditions, such as extent, complexity, and instability.

Finally, it seems unquestionable that, in common with labor, the enterpriser as a human being undergoes certain other costs which are incidental to his functioning. These costs do not characterize enterprise, but as long as the man is an enterpriser, they must be added to the more characteristic costs of enterprise. Thus there is often a sacrifice of leisure which must be incurred if the enterpriser is to organize and direct his business. (The intensity of his application and the magnitude of his worry cost may make longer rest periods necessary for efficiency than is the case with labor.) Probably, too, there is an element of fatigue connected with mental effort which may play a part as a cost of enterprise.

And may we not find in the preparation of the successful enterpriser an element of training involving expenses? These expenses may be reckoned as a part of the cost of performing his function, in much the same way that they were reckoned as a cost to the laborer. Something analogous to an apprenticeship may be found in the enterpriser's training. Not infrequently the college education may be at least in part chargeable to the same account.

It is not the purpose here to present a final and complete list of all those items which may be entered under the head of cost and expense. The foregoing is a broad outline of the more obvious or characteristic items, presented in order to indicate the reality, and something of the nature, of the various costs and expenses which pertain to the entrepreneurial function.

The essential point is that one or more of these costs and expenses serves to set a minimum below which profits cannot be expected to fall permanently.

Profits a net sum. One of the most persistent notions which runs counter to the foregoing analysis is that the risks of business are such that the losses offset the gains. If that were true, no net profit could exist in the long run. In this way of looking at the matter, business risks are conceived of as if they were inevitable, but calculable. This is the idea of insurance based on chance events. The

rewards of the successful ventures would thus be required merely to offset the failures of the unsuccessful ones.

To the contrary, it seems that three points may be made which throw light on the existence of profits as a permanent net element in the social income. They are as follows:

First, *by skill, the enterpriser may reduce the business risks, in the sense that he may increase the probability of meeting them successfully.* Thus he may increase his chances of gain. Some enterprisers may not have the skill that is needed for this purpose; and they are apt to fail. But some succeed, and come to count on their skill; both they and those who observe them (say, their bankers) count on their being right considerably more than half the time. They are recognized as good "money makers". Under such circumstances, it cannot be said that business is a matter of pure chance, or that profits and losses are equally probable. These statements can apply to only a part of enterprise—to those enterprisers who are "good business men".

Second, *risk bearing is irksome, and is not entered upon lightly.* Many men fear the condition of bearing risk, even though they may be attracted by it in some respects. Moreover, it seems unquestionable that one of the most important requisites for success in dealing with both risks and uncertainties is ability to meet them without fear or worry. The group of enterprisers, therefore, is likely to include a large proportion of those who are best qualified to bear business risks. To the extent that this is true, *it seems to follow that profits tend to exceed losses.*

Third, *the losses of the unsuccessful business men are not likely to equal the gains of the successful ones.* This seems to follow from the process of selection referred to in the preceding paragraph. More particularly, however, it seems probable that the losing ventures are likely to fail within a period which is less than the average life of all business ventures. Furthermore, it seems probable that the losing ventures are, on average, able to get less capital than the successful ones; and certainly we know that just as the good farmer usually gets the good farm, so the good business man usually gets the good location and the good equipment and credit. In short, in

business nothing succeeds like success, and the successful enterprise tends to last longer, grow faster, and be better equipped than others. Therefore, not only do some business men usually make profits, but also the total of profits tends to exceed the total of losses.

(3) *Holding Power*. Anything outside himself, independently of his valuation of his own services, which affects the enterpriser's bargaining power, or his will to hold out for profits, will be considered as coming under the head of "holding power". Probably the two main general categories under this head are the *degree of competition* in the industry, and the *financial position* of the enterpriser.

As bearing upon the former, one of the most fundamental conditions lies in the number and ability of those individuals who are seeking to be enterprisers. These things naturally depend largely upon the character of the people in the society in question, the amount of wealth, and its distribution. Then, too, the institutions of the society may have an important bearing upon the degree of competition, and thus upon the holding power of enterprise. Anything which affects the ease of setting up in business, would come under this category: laws, customs, and forms of industrial organization. It is here that the work of legislation pertaining to taxation and business regulation, gains a part of its social importance.

The financial condition of the enterpriser has such an obvious bearing upon his holding power that no discussion seems necessary. One of the more important aspects that might be discussed at greater length under this head, however, is the problem of the relative desirability of operating on one's own resources or on borrowed funds. Clearly, if the enterpriser be dependent almost entirely upon borrowed funds, there may come times when his holding power will be slight or nil.

(4) *Non-economic Motives*. As was the case with "risk", so it is with non-economic motives; each factor of production is affected by some conditions outside of those which may be regarded as purely economic. In this, business enterprise is no exception.

To the author's way of thinking, one cannot explain the profit situation at any given time in any given society without making allowance for the following five non-economic factors: prestige,

power, gambling, play, and habit. (a) It has long been recognized that many a man prefers to operate an independent business as an enterpriser on account of the *prestige* which he feels pertains to such a position. This may lead to the supply quantity of entrepreneurial ability becoming so large that profits may be smaller than would otherwise be the case. It should be noted, however, that, prestige does not vary directly with degree of enterprise, but depends somewhat upon the kind of business. In fact, one can find cases in which profits are higher than the average for a technically similar business, because of the disrepute in which the business in question is held. (b) No discussion seems to be required of the fact that love of *power* is one of the chief driving forces, operating particularly in the case of so-called big business. (c) Many persons enjoy taking chances, and doubtless the "*gambling* instinct" has something to do with leading men to assume the risk of enterprise. (d) Again, one recalls that it is not uncommon to hear business referred to as a game at which men *play*. Unquestionably, many men find in their business an outlet for the urge to engage in contests of skill with their fellows in much the same sort of way that young persons engage in sports. (e) As to *habit*, anyone who has much acquaintance among business men will know of some older men who go to their businesses through routine, following the beaten path which their feet have trod for so many years that they would hardly know what else to do. This motivation by habit is doubtless often mixed with the other non-economic motives. It may, however, be separate. Certainly, it contributes to maintaining a supply of enterprisers, without much regard for the objective value of the service rendered, or the costs that are involved.

3. Supply Quantity of Enterprise

What is a unit of enterprise? One of the least satisfactorily handled matters pertaining to enterprise, is the basis for measuring the quantity of the service which is involved. It therefore seems especially necessary to consider the procedure adopted in dealing with the other factors of production, in order to ascertain the possibility of treating entrepreneurial ability in terms that are commensurable

both with other factors and with the joint product. If we can distinguish "units" of entrepreneurial ability, or enterprise efficiency, these may be associated directly with the units of product to which they contribute, so that the quantity of demand for them may be derived from the demand for the products, at the same time that their costs and scarcities affect the supply of the products.

(1) *Profits as a "Rate"*. A question which naturally and inevitably arises at this point, is this: With what object are profits logically correlated? Is it possible to think of profits as a "rate"? If so, the question is, Profits per what? The obvious answer that profits are related to enterprise, is not adequate, since there exist questions concerning the quantitative and homogeneous nature of the latter. Only if enterprise be considered as a productive "force" which can result in additions to products, and thus create the material basis for profits, can it be treated according to the logic of science, and, as a series of homogeneous power-units, be correlated with product units.

Any concept of an entrepreneurial "force" must lead us to look for it in connection with the form of "business organization"; it must be essentially related to the business unit. A "business unit" is an aggregate of the several agents of production which is headed by a definite enterpriser or group of enterprisers, the latter being responsible for the functioning of the aggregate. This is true whether it be a partnership, a corporation, or an individual enterprise. Why, then, not measure profits per business unit, and report them as being so many thousand-dollars-per-annum for each particular business concern?

At once, an obvious difficulty appears, namely, that business units, so-called, are not "units" in the strict sense of the term. Obviously, however they may be measured, they differ widely in size, and they differ in other respects. Nor is there any easy way to reduce business units to homogeneity. The classical procedure has been to attempt to measure the business unit in terms of invested capital, and accordingly to figure profits as a percentage on such a valuation. We have seen, however, that the functions of the enterpriser do not depend upon the mere amount of capital. There is the greatest confusion and difficulty when one tries, as has been so common in economic

thought, to mix enterprise and capital. Though in practice often associated, the two things are functionally different. In theory, they must be distinct. Business risks, profits, and responsible decisions as to what is economically worth while, are not coordinate with the amount of capital used or in existence, and cannot be correlated therewith. In fact, the success of the business may depend upon decreasing the amount of capital and increasing the use of other agents of production.

Nor would it be any more logical to treat the business unit as being dependent upon the number of laborers employed, or to judge its size by its payroll.

Finally, there is the possibility that profits might be correlated with the number of enterprisers associated in the business unit, and that one might expect profits to be small in concerns in which there is only one enterpriser and large in concerns in which there are many enterprisers. There seems to be even less sense, however, in measuring profits as being "so much per enterpriser" than there is in considering the concept of wages per laborer or interest per machine.

After all, enterprisers are persons just as laborers are, and to attempt to deal with the determination of profits in any causal way, makes it necessary to avoid entanglement in the problems of personal distribution. Profits depend upon enterprise as a force, or entrepreneurial ability. Obviously, it is logical to expect profits to vary, not in proportion to the number of enterprisers or the amount of capital, but in proportion to the *ability* of the enterpriser or enterprisers as manifested in services performed. (To be sure, the most enterprising enterpriser is likely to be the one who gets the most capital, but at best, capital as an indicator is but a symptom.)

Again, it seems clear that the idea of Distribution as a matter of "rates" is a superficial one. This we found in dealing with interest, since it appears that in order to understand the interest rate we must first explain two values whose interrelation is expressed in the interest rate. The practice of dealing with Distribution as a matter of rates is probably the result of business usage.

If, however, for comparative purposes the economist desires to

treat profits as a rate-per-something, he will find the most significant bases are probably the total expenses of the business and the total sales of the business. The total annual expenses represent, in a way, the amount of risk undertaken by the enterpriser in paying wages, interest, and rent. Moreover, it is not an infrequent business practice to figure profits on "cost". On the other hand, the total profits of the business appear to result from a mark-up which makes the sales larger than the expenses, and it may have some significance to figure the annual profits as a rate on the basis of the total annual net sales. Such a rate may be thought of as having some relation to the enterpriser's risk in marketing, as well as to his ability in producing goods that will sell.

(2) *Functional Basis for Measuring Supply Quantity.* In further amplification of the preceding idea, it should be noted that each of the basic factors of production has its essential function, and that that function is closely related to the basis for measuring the supply quantity of the said factor. For example, the function of land is that of furnishing standing room and space; accordingly, we measure land in units of area, say acres. The function of labor is to supply a form of energy in production, and accordingly we measure labor crudely in man-hours, but recognize that it is desirable to consider it in terms of some power unit, such as a watt. Capital has its significance in connection with time, and the cost of saving which comes with the passage of time. In practice, this has resulted in measuring interest with relation to the cost of investment. Now, coming to enterprise, we find that the function is to bear business uncertainties and risks, or to supply the skill that is required in dealing with those conditions. The uncertain risk of doing the things which are not economically worth while, is the essence of the situation; and this finds expression in the characteristic importance of establishing a positive relation between cost and utility. (The business man would say, between expenses and sales.) It is therefore with relation to this sort of risk-taking ability that profits must be measured.

4. The Process of Equilibration

The elements which enter into the determination of competitive profits have now been outlined in an analytic way, and have been classified accordingly as they enter on the side of demand and supply. How enterprise may be measured and correlated with product, has also been indicated.

It might seem at first glance to be simpler and more in accord with business phenomena merely to have listed such concrete items as the following: the productivity of industry, the number of enterprisers, the abilities of these enterprisers, the abundance of the other factors of production, and the condition of business, particularly as to the trend of prices and other matters affecting so-called business opportunities. The careful reader, however, will have noted that not only are all these, and more, provided for in the preceding discussion, but also that they are classified in a more scientific manner.

Thus we are now in a position to consider the process of equilibrating the demand and supply "forces" with relation to the quantity of enterprise—the process of "determining" the amount of profits.

As a first approach to the problem of the determination of profits, and one that is not complete or final, it is well to note that (1) the *maximum* of profits is set by the quantity, total value of product minus *minimum* allowances necessary to induce the other agents of production to function. On the other hand, (2) the minimum profit cannot fall below the amount required to induce the enterpriser to function.²⁹ This will *tend* to be enough to cover the costs of enterprise *as the enterpriser appraises them*, including both some compensation for his peculiar risks and some reward for his ability as an enterpriser.

To the individual enterpriser, it may seem that this minimum is set by the alternative he may have of working for a salary. As already

²⁹ It should be noted that even this partial and incomplete approximation is not a "residual claimant" theory; since it provides definite maxima and minima, and assumes a positive productive function to be performed.

pointed out, however, this is but a narrow individualistic view (see page 661). To bring out its limitations, it is enough, for example, to point out that some enterprisers may, as a matter of fact, have no salary alternative.

If we think of profits as being the functional income of certain persons or business organizations, the following statement is true: The marginal profit is the minimum profit which the least able enterpriser who, on the average, can operate without loss, requires to induce him to incur the non-insurable hazards of business. Other enterprisers may make larger profits, and these may be considered as differential profits. Such differential profits are, or tend to be, in proportion to the abilities of the different supra-marginal enterprisers to bear the risks and uncertainties of business; which abilities, as a result of better anticipation of price changes, lower operating expenses, etc., find expression in smaller losses and larger gains.

If, however, we seek a more exact and scientific basis for explaining the determination of profits, we must go back of the concept of "the marginal enterpriser", to the concept of the marginal unit of enterprise—the marginal unit of the "work done" by the enterpriser—his service. This gives us the concept of a "force" which can be measured. It also takes us to the product, which is, in part, the tangible expression of the enterpriser's performance.

To be more precise, it takes us to the margin of production in the given industry. Here we find marginality to be dependent, on the supply side, upon the efficiencies and supply-prices of the factors of production, including enterprise. Thus, the marginal product, at the margin of production in the particular industry, embodies the marginal unit, or units, of enterprise. Thus, too, the marginal profit is or tends to be the profit per marginal unit of enterprise-ability per marginal unit of product.

It will be well now to bring the discussion to a conclusion by putting these conditions together, with the aid of a diagram, so that their functioning and interrelations may be readily grasped in their entirety.

As usual, on OX are measured physical units of product, and on OY, units of human motivation—utility, cost, value, and expense.

DD' represents a curve of demand intensity, "demand-prices", or buyers' bids for products; while SS' represents supply intensities, "supply-prices", or sellers' offers with reference to products. The line PV represents the value of a unit of the product in question, when the quantity for sale (OV) is such that it can be disposed of at the price level, PP' , P being the point at which marginal bids and marginal offers are approximately equal. At the point, V , we find the marginal unit of product.

The curve, ls , represents a series of labor supply-prices; cs is the curve of capital supply-prices; es , the curve of enterprise supply-prices. (Incidentally, the latter coincides with a part of the curve SS' , simply because we have put the allowance for enterprise at the

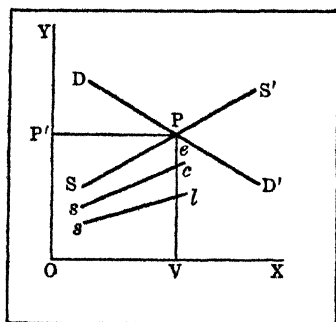


FIG. 27

top of the three elements which enter into the determination of the supply-price of the product. This procedure is in accord with the fact that *profits are more directly related to price than are wages and interest*, and that, in a sense, the shares of labor and capital have prior claims.)

Thus, from the social point of view, and assuming reasonable competition, we find an allowance for profits on top of the allowance for capital and labor. The allowance has to be of a certain minimum amount, because of the supply-prices which obtain in the minds of enterprisers. The consumer has to pay enough (PV) to cover not only lV and cV , but also eV . This quantity, eV , is the marginal supply-price of enterprise, or entrepreneurial ability, considered as homogeneous units of productive power; it is also the value of that quantity of enterprise which enters into the marginal unit of a product.

The total value of a product unit, PV , is four different things: It is, (1) the total value of the quantities of labor power, capital efficiency, and enterprise which enter into the marginal unit of product. In other words, it is (2) the total of the supply-prices of

those who furnish labor, capital, and enterprise services, with due regard to their costs; and, at the same time, it is not only (3) the marginal demand-price for a unit of product, but also (4) the total of the demand-prices that enterprise offers for units of capital and labor, together with the marginal supply-price of enterprise itself.

The line PV represents both the value of "efficiency units" of producers' goods (the "services" of the several factors of production), and the value of a product unit. The area SPV represents the costs, subjective valuations of services, and "holding-powers" of labor, capital, and enterprise. Since PP' represents the level of prices at which the quantity of product units, OV, is sold, the differential area SPP' is the sellers' surplus. Similarly, the differential area DPP' represents the buyers' surplus, since buyers whose potential bids fall on the line DP' would be willing and able to pay more than the price PP'.

Thus, there has been developed a theory of profits determination, according to which the way has been prepared for taking four essential steps:

First, this theory shows how to analyze the quantitative relation between enterprise and product, so as to enable the economist in theory to find the number of units of enterprise per unit of product. This provides a theoretical basis for ascertaining the profit per unit of product, which is not only valid as a fundamental theoretical concept, but also is commonly used in business practice.

Second, it is now possible to calculate the total profits per business unit. Given the proportion of enterprise, and the value per unit of enterprise, the total profit of the enterprise will depend upon the number of product-units produced and sold, since it is in the product-unit and its value that the value of the enterprise-unit is found. Assuming that enterprise has some value, the more enterprise-units per product-unit, and the larger the number of product-units sold, the greater the profit (or the less the loss) of any given business unit.

Third, and incidentally, we may in some cases figure the profit per individual enterpriser; although this will not be significant from a scientific point of view, unless we allow for the different

abilities of the several enterprisers, thus virtually reducing them to units of enterprise.

Fourth, and finally, we get the concept of the total profit share in the social income. This is the sum of the profits of all the business units in the society; it is also the sum of all the profits per unit of product sold in the society.

C. Non-competitive and Price-determined Profits

So far, the discussion of profits has concerned net competitive profits; that is, profits which endure under a condition of competition, and on the average over a period of time. Such profits enter into the determination of price in the same way that wages and interest do.

This statement suggests that various other classes or kinds of "profits" have been distinguished, which, in order to avoid confusion of thought, must at least be put in their places.

First, we may distinguish price-determined profits from price-determining profits. As just noted, profits which are necessary to motivate productive services rendered by enterprise, are price-determining. On the other hand, however, there are profits which are *results* of price spreads or price changes, and which, accordingly, tend to disappear in all cases in which production is possible. Thus, gambling of any sort may result in "profits" which depend upon prices in much the same way that they may depend upon the turn of a card. Mere speculative operations, which often shade into gambling, may also lead temporarily to price-determined profits. Probably, too, merely acquisitive profits are to be thought of as essentially price-determined.

The last observation suggests another basis of classifying certain incomes which are sometimes called profits; for, in addition to competitive profits, from a social point of view, we find "acquisitive profits", "predatory profits", and "monopoly profits".

Acquisitive profits are those which are taken by one enterpriser from another without making any addition to the total profits as a net share in the social income. By a clever advertising campaign, for example, one toothpaste or bathing-suit manufacturer may in-

duce people to use his toothpaste or bathing suits instead of the toothpaste or bathing suits manufactured by another. Thereby he may add nothing to the total product or to the total profits of the society. Such acquisitive enterprise need not result in raising prices;⁸⁰ and it does not seem to be essentially a source of price-determining profits. Certainly, however, it is apt to prevent prices from being as low as they might otherwise be.

Predatory profits are those which are derived from unfair, destructive, or exploitative forms of competition. While acquisitive activities are merely negative in their social significance, predatory activities are positively harmful or destructive. Fraudulent business schemes and the sale of adulterated or injurious products, are illustrations of what is meant.

Monopoly profits are those which result from such a control over the supply-quantity of a product as enables the enterpriser to raise the price above the competitive level. On the assumption of intelligence and perfect monopoly power, it may be said that monopoly profits tend to be the largest possible profits, since they then arise from a tendency to restrict production to the quantity which will bring the highest net return to the enterprise. As a matter of fact, however, *there can be no assurance that monopoly profits will represent the maximum, since there is no competitive spur to drive the enterpriser to seek all possible economies in production.* The monopolist, moreover, who relies *solely* upon control over a market, cannot get the largest possible profit. Of course, as an offset, there may be some assurance that any "wastes of competition" will be avoided, but it may be doubted that such avoidance would be fully compensatory for the absence of competitive efficiencies.

In the case of monopoly profits, it is of considerable theoretical importance to note that, while the total profits cannot be regarded as tending with any high degree of probability toward the maximum, we may accept it as being highly probable that, in a given industry under similar circumstances, *the profit per unit of product will be larger under monopoly than under competition.* The quan-

⁸⁰ If it has such an effect, it will be through waste, or the inefficiency of small-scale operations, or the introduction of a monopoly element.

tity of goods or services supplied being somewhat reduced from the point at which competitive equilibrium would be established, the price of the product is somewhat higher,³¹ and this increase in price must strongly tend to go entirely to monopoly profits, since it is attributable to monopoly. Referring back to the preceding figure (page 672) the foregoing statement means that PV would be moved to the left and become a greater magnitude up to the limit set by DD', and that the addition thereto would result from a lengthening of the line *ec*.

It seems safe to assume that the monopolist will tend to seek a part of the buyers' surplus, and that where classification of the product is possible, he will resort to the practice of "monopoly class price".³² That is, he will make differences in price which are greater than the differences in the cost of producing the different classes of product, appealing to those buyers whose demand is most intense to buy a somewhat higher grade of products for a much higher price.

The foregoing very brief classification of different kinds of income which are not to be confused with competitive profits, has been presented with the idea of emphasizing that the position here taken is based upon the assumption that economic science is concerned primarily with free individual choices made according to a social point of view. This does not necessarily lead to the assumption of so-called perfect competition. It does, however, allow us to simplify the analysis by eliminating from it any detailed consideration of predatory and monopoly profits. Monopoly, where it exists, we regard as passing out of the realm of economic science, and into the field where regulation by representatives of society is expedient.

³¹ Cf. above, pp. 354f.

³² See Fig. 23, page 484.

Chapter XIII

LAND AND LAND RENT¹

It is logical to begin a discussion of land rent by examining the functions of land.

A. *The Nature of Land*

In economics, it has long been customary to use the term "land" as synonymous with man's physical environment. Thus, land may be thought of either as embracing all the materials and "forces" of nature, or more abstractly, as consisting of all matter and energy external to man. Obviously, the broadest characteristic of the thing, land, is the fact that it lies outside of man himself, and forms no part of the human being. And closely related, is the further fact that the total quantity of it exists independently of human effort.

All these things, however—materials, forces, matter, energy—are practically available only on the earth's surface. Therefore, the qualities of standing room and area are highly significant in the concept of land, and we may say that "extension" is one of the primary aspects.

More than this, the earth's surface is both limited and diverse; it has an extremely limited area and is very different in its qualities from point to point. Therefore, *location* is also a quality of funda-

¹ R. T. Bye, *Principles of Economics*, 3rd ed. (1935), XIX.

T. N. Carver, *Distribution of Wealth* (1932), V.

F. A. Fetter, "The Passing of the Old Rent Concept", *Q.J.E.* (1901); "Rent" in *Encyclopedia of the Social Sciences*.

L. H. Haney, "Rent and Price: 'Alternative Use' and 'Scarcity Value'", *Q.J.E.* (1907).

A. S. Johnson, "Rent in Modern Economic Theory", *Papers and Proceedings of the Amer. Econ. Assn.* (1902).

A. Marshall, *Principles of Economics*, 8th ed. (1920), Bk. VI, Ch. IX-X.

F. W. Taussig, *Principles of Economics*, 3rd ed. (1929), Ch. 42-44, 46.

mental importance, and with location, the idea of *accessibility* to particular areas becomes significant.

A piece of land, say an acre, is thus primarily the materials and forces of nature *in situ*. Or, in somewhat more practical terms, it may be defined as *standing room, having the qualities of extension and location*, so that man may operate thereon with a certain degree of accessibility to other areas.

More concretely, a piece of land, say an acre, means the following:

- (1) A certain *soil* and *sub-soil* or foundation, characterized by physical and chemical peculiarities which affect either its fertility or its foundational qualities, or both.
- (2) A *topography*, with a certain slope and rise-and-fall which affect transportation, drainage, climate, and other conditions.
- (3) A *sub-surface condition* which determines whether water, metals, or minerals are to be found, and possibly even whether the land in question will be subject to earthquakes.
- (4) A *climate*, with its characteristic rainfall, winds, temperature, and the like.
- (5) *Flora* and *fauna*, partly the result of the preceding conditions.
- (6) A *social environment* which may be of considerable importance as affecting the value of the location for economic use—e.g., markets.

Obviously, those who think of land either as being a mere quantity of soil fertility, or as being merely an abstract location, do not have in mind the full scope of the concept. The possession of any acre on the surface of the earth involves necessarily all of the other elements in the situation, as briefly summed up in the preceding statement. The most sweeping generalization one can make is that always there are the qualities of extension and location, and that man cannot enjoy either the climate or the sub-surface wealth without standing room at some point on the earth's surface.

1. "Original and Indestructible Powers"

David Ricardo spoke of land as consisting of the original and indestructible powers of the soil, and few statements have been more criticized than this one. Logically examined, however, the statement is not so erroneous as it has sometimes been considered. Land is original, in the sense that it existed before man did. (Here

is a point upon which both fundamentalists and atheists or agnostics can agree!) Also one may ask, Is matter not indestructible? Is energy not indestructible? Any scientist will answer, Yes. One may therefore conclude that to the extent that we regard land as consisting of matter and energy, we must regard land as indestructible.² Or one may ask, Are the climate and the topography and the sub-surface wealth not indestructible?³

If one were to attempt to rephrase Ricardo's statement in a way that would invite less criticism, it might be done as follows: Land consists of the original materials and forces of nature, and any durable adjustments therein which are so inseparably connected with the location or the soil that they cannot be evaluated separately therefrom.

Or one may say that land is the productive agency which is so intimately connected with location as to be practically immobile and non-reproducible.

It is helpful to a better understanding of land to remember that this factor of production is more nearly passive than the others. Thus we make "improvements" in land; and these improvements, so-called, are controlled and limited by the land itself. The desira-

² I do not say that this is what Ricardo said or meant. Certainly it is not what his more acute critics have attacked. But there is a basis in physics for a strong case in defense of Ricardo's conclusions.

³ F. H. Knight, in his revealing article on Ricardian Theory of Production and Distribution in Volume 1 of the *Canadian Journal of Economic and Political Science*, argues that it is false to say that land is not produced. He holds that "to the degree that people knew what they were doing, and there was effective competition, the use of labor and property (capital) in pioneering and all exploration and development activities could not yield a return smaller or greater than that obtainable in any other use". One of the weaknesses of this attack is revealed in Knight's own words, for in noting that land is peculiar in its relation to "extension" and "location", he adds that it is also difficult accurately to foresee the results of putting labor and "property" (capital) on it. My point is that people cannot know "what they are doing" in the case of land as they can in the case of capital goods. In this case, to use the words "to the degree that", is a confession of weakness. Moreover, Knight goes on to say that it is "no doubt" true that in comparison with capital goods, the results obtainable from land are "less accurately foreseeable"! Furthermore, the assumption that "effective competition" can affect land in the same way that it does other factors, savors of question-begging; since the immobility and fixed special capacities of land are among its fundamental peculiarities.

bility or even the possibility of constructing roads or ditches, and performing fertilizing or reclamation operations, will depend upon (a) what there is at the given location, and (b) what its accessibility is with relation to other locations. Again, deterioration in land is governed by the conditions which the land itself determines. For example, the growth of weeds depends upon the soil and the climate. The much talked of washing or erosion of soil again depends upon the soil, topography, and the climate. So it is with the exhaustion of the chemical elements in the soil, and other forms of deterioration.

Thus land differs from those instruments, such as machines and buildings, which man makes out of the materials furnished by land. Such instruments, which economists generally have called capital goods, are made by man, and can be destroyed by man. Land is thus distinguishable from capital goods in many respects. Not only is the essence of land the idea of space, with the original elements of extension and location as the outstanding aspects; but there is the fact that matter and energy cannot be produced by man. The location and climate and sub-surface wealth, are what they are. All man can do is modify them—to make them more accessible, to “reclaim” and to “improve”. First, however, there must be something “there”—in the given location. The results which one gets depend primarily upon the land, and have no direct relation to cost in the sense that the value of the product or the area affected is in proportion to human effort or expense. Similarly, one cannot destroy land, which is matter and energy; nor can one destroy location. The essence of the capital good, however, is in its form, and if one takes a sledge hammer and smashes a machine or tool therewith, the capital good is gone, although matter remains.

Nor does land wear out with economic use. Even use in agriculture does not *necessarily* exhaust a soil. Economic use, with such methods of cultivation and crop rotation as experience teaches, allows man to utilize any soil without deterioration.*

* The very fact that adjustments have to be made to the nature of the soil, topography, etc., proves the independent existence of land as a factor of production.

The life of land is either indefinitely long, and therefore without any annual depletion rate; or else it is that of a fixed quantity of ore or other exhaustible deposit which cannot be replaced, and for which a depletion charge must be made that is peculiar to land. Thus there is no time factor involved in the valuation of land as is the case with capital goods. Valuation by a process of capitalization is merely a matter of expediency connected with temporary property rights, and is not essential or fundamental.

As will be shown, the existence of so-called quasi-rents merely illustrates and emphasizes the differences between land proper and durable capital goods.

Of course, as some authors have deemed expedient, land may be called "natural capital". But why may it not be just as expedient to call capital "artificial land", or to call labor "human capital"? (After all, when one reaches a certain point, the use of words is a matter of custom and the dictionary!) The definition of land here adopted is in line with the long-established terminology of scientific economics. It also fits business usage just as well as such usage could be fitted by calling all land "capital", since business recognizes "real estate" and "site value" as distinct matters, and distinguishes rent from interest. The latter point, however, should not be stressed, since business usage cannot be taken as constituting even a *prima facie* case for social science.

2. Land Not a Sum of Values

One question which has often arisen in the long discussion of the true nature of land, appears in some tendency to treat land as a *quantity of value*. Perhaps this tendency developed out of business usage, since business men frequently include land in what they call their capital—that is, their investment—just as under slavery man himself was so included. But to treat land as a quantity of value, begs the whole question of the determination of the return on land, or rent. It is necessary to ask only one question, namely, What determines the *value* which is taken as being the land? And a little back of that question, lie such questions as these: What limits the supply of the land upon which partly depends its value? What ex-

plains the differences in the values of different lands? Obviously, if we are to start by saying that each piece of land has such and such a value, we will never begin at the beginning!

Or if we say that the value of the land is merely its capitalized rent, we have still to ask, What is the rent, and how is it determined? Until that question can be answered, the arithmetic process of capitalizing cannot even be started.

The general position of economic science is that land is a distinct primary factor of production, which derives its value from the products to which it contributes. The value of these products is determined by the forces of demand therefor, and by the forces of supply, among these latter forces being the limitation imposed by the natural scarcity which characterizes land itself. Without, however, anticipating the theory of rent determination, we need merely observe that the value of land is a result—the result of demand and supply conditions which require careful study. The value of land cannot be the land itself.

3. The Value of Land Calculated by Capitalization

At this point, it may be well to explain why the value of land is always calculated by a process of capitalizing its income or rent, a statement which cannot be made regarding any of the other factors of production. While it is true that the factors, capital and labor, also have their *demands* determined on the basis of productivity or income, it is not true that their values are thus determined. Their values, as distinguished from their demands, depend upon both supply and demand as these affect the conditions which determine the availability of the factor itself for productive purposes. On the supply side, for example, there is always some cost or expense of producing the factor, which cost affects the cost of producing the product. The potential supply of such factors of production as labor and capital is controlled by human interests and motivations as affected by costs. The units of supply quantity are ever changing through wear and obsolescence. Within wide limits, they can be increased. (Incidentally, it will be noted that most if not all of those limits are set by land!)

On the other hand, land proper, as here defined, is not produced or limited by cost of production, and it is characterized by permanent differentials in income, which differentials tend to increase as society develops. Thus any supply schedule which may be thought of as existing in the case of land, lacks some of the elements of other supply schedules, and has a different bearing upon the quantity of the factor available. In the last analysis, the scarcity of land is a "natural" scarcity.

It follows from these considerations that for land, as a factor of production, there is no way to explain equilibration of demand and supply intensities, regarded as coordinate forces, as in the case of other goods, both consumer goods and producer goods. There is no objective way to explain land valuation other than to capitalize the value of its net product. In this respect, and in this respect only, land ownership has something in common with monopoly, since in monopoly, too, the quantity of factors used is not determined by an equilibrium between demand and supply schedules, but is a matter of scarcity value—what the traffic will bear.

B. Land Rent Defined

A general descriptive definition of land rent, not analytic, is presented first, as follows: Land rent is that part of the income of society which is attributable to the physical environment.

According to this descriptive definition, it will be noted that land rent is the result of a contribution made by land. This statement is by no means a mere truism, and it is highly significant, because we may deduce from it the important fact that land rent would exist regardless of property in land. It is not derived from private ownership of land. Quantitatively, the contribution which land makes may be somewhat affected by the institution of private property, but this is very different from saying that rent is the income received by land owners, or the amount paid for the use of land.

It is most important to understand that the fundamental concept of land rent, as the term is used in scientific economics, is not a "payment for the use of land". So-called "contract rent" is not

basic,—it supplies no basis for an explanation of the phenomena of differential returns to land, or land values. In the first place, the payments actually made by renters to land owners may be either more or less than the net product of the land; and there never can be any certainty that a given contractual arrangement will correspond exactly to the productive contribution made by the land. In the second place, *a great deal of land is not "rented" at all*. Accordingly, a great deal of land is not paid for in the form of a contractual rental payment; and if rent were defined as a payment for the use of land, the term would thereby be made inapplicable to a large part of the land now in use. In the third place, it should be obvious upon a moment's thought, that even if no payments were made for land, no private property therein being recognized, land rent would still exist as a part of the income of society. Land would still be characterized by the same limited quantity, and the products of land would still sell for similar prices, so that the natural differences in land productivity would still give rise to differences in income of land, which, as will appear shortly, are the basis for land rent.

Of course, too, one might dismiss the idea that it is expedient for economics to treat rent as a payment for the use of land, by asking, Why is any payment made? What determines the amount of the payment? To assume that any rental "payments" which one happens to find are to be taken for granted as being true land rent, may be convenient, but it affords no basis for scientific explanation.

1. Three Concepts of Land Rent

There are three distinct concepts of land rent which it is desirable to keep distinct. These are as follows:

- (1) The *full economic land rent*, which is the net product of land as utilized with the most productive combination of the factors of production.
- (2) The land rent *actually earned*, which is the net product of the land with that combination among the factors of production which actually exists at any given time.
- (3) The *contract land rent*, which is merely the rental that is

actually paid at a given time according to agreement between land owner and tenant.⁵

These three concepts of rent may all be found in wide use by economists and business men, all being designated simply as "rent". Yet they are widely different. The landlord and tenant may drive a bargain in which one of the parties is either ignorant or subject to influences which lead him to accept unfavorable terms. If this party be the tenant, the "contract rent" paid will be a high one. Let it be supposed, however, that the tenant proceeds to use the land, and, after a reasonable period of trial, finds that he cannot actually earn enough on the land to pay the rent stipulated in his contract. The contract is then likely to be revised to conform to what the tenant actually gets from the land under the existing conditions. But the landlord may still believe that the tenant could pay the higher rent if he would use better seed, more fertilizer, or more modern buildings. Finally, the experiment may be made according to the landlord's judgment, and the most perfect combination among the factors of production be obtained. It may then be found that the full economic land rent is greater than any sum which the landlord had been able to collect from the inefficient tenant.

It is the author's opinion that economic science should deal with the *full economic land rent*. Nor does this concept seem to be too abstract to be of practical value. Is it not a fact which conforms to the observation of any man of wide experience that the contract rent must and does tend to equal the rent actually earned? Even when long leases are made, if the rent proves to be too high for the actual conditions, ways are usually found to break or amend the contract. And does the rent actually earned not tend to equal the full economic land rent? Probably this tendency is not so strong, and prompt in action, as the other. But we may be reasonably sure that if, under existing conditions, the rent actually earned is too far below what might be earned with the most productive propor-

⁵ By including "contract rent" in a classification of rent concepts, there is no intention of approving the use of such a concept as a basis for economic science. I merely recognize again the existence of the "price economics" with its entrepreneur point of view, and its non-causal opportunity-cost approach. If consistent, such economics will stick to "contract rent".

tion among the factors, some tenant will eventually be found who will see a chance to make a larger income for himself by paying a higher rental for the property.⁶

2. Final Definition

The final analytic definition of rent which will be adopted for the purpose of the remaining discussion, is as follows: Land rent is the differential⁷ return which measures the natural scarcity of land efficiency. In other words, land rent is a permanent differential arising because of the natural scarcity of land, and it measures the degree of that natural scarcity.

This definition is built up out of the following considerations: Land is scarce and has different natural capacities. Man, therefore, has to utilize land intensively, both because of its scarcity as a whole, and because of the limited supplies of those kinds of land which have certain special capacities. But this condition necessarily leads to diminishing returns from land. Therefore, a differential return arises, and is measured from a margin at which there is no return to the land. This differential is land rent.

The word "is" is italicized, because of the frequency with which economists speak of rent as being "determined by" a differential or a margin. Rent is not determined by a differential return; it *is* a differential return. What one can say is that rent is *measured* as a differential from a no-rent margin. The truth is that the identical forces which determine the margin and the differential, are at the same time determining rent.

Land rent is a species of the genus, rent. In other words, the term "rent" has a wider use than that which we make of it when we refer to land rent. In common speech, things which are "hired" as physical units, such as horses, boats, "dress suits", and houses, are spoken of as being rented. These things, it will be observed, are all durable, non-fungible, and usable apart from ownership. In all these

⁶ At least, if we assume economic motivation under a system of private enterprise aided by information, sound money and credit, and protection against exploitation.

⁷ It will be recalled that a differential is a surplus over cost, which results from the sale at a uniform price of goods produced at different costs.

cases, too, the so-called rental payment is made periodically, but not with any direct relation to cost.

The economic usage, however, is very different. Historically, the term rent has been preempted by economists for use in connection with land. In this use, it indicates a high degree of permanence in the differential return that is involved, such as is found only in the case of natural agents external to man. Economists have long realized, however, that there are differentials other than those which arise from the use of land, and it has therefore seemed advisable to specify "land rent" when the differential pertains to land. The term "quasi-rent" may then be used to cover all those differentials which arise from the utilization of productive agents other than land. In the case of buildings and heavy or expensive machinery, such differentials may be considerable, and may persist for surprisingly long periods of time.

C. *The Determination of Land Rent*

How, then, is land rent determined? As in the case of all values, the first approach to the problem of determining land rent lies in the way of analyzing demand intensities and supply intensities, with reference to the quantities of the object that are available. These intensities will show us the way to the determination of an equilibrium which will occur at the margin from which the differential may be measured.

All this may be illustrated by the following simple diagram:

The curve DD' represents the demand schedule for some product to which land contributes. After making allowance for wages, interest, and profits—or the value of the services of labor, capital, and enterprise—which we assume to be determined at the same time that the price of the product is determined, we derive the lower curve, dd' , which represents the demand-intensity for the service of land, or land-efficiency units. That is, the demand for land is derived from

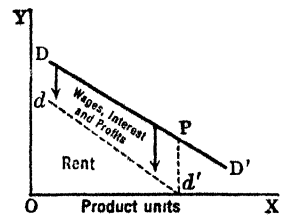


FIG. 28

the demand for its products. Since wages, interest, and profits cover all costs pertaining to labor, capital, and enterprise, and there are no other costs pertaining to land, the curve dd' tends to fall to zero, where it intersects the base line, OX —along which line are measured the product units. Therefore, the point d' is the margin of land use, and the area $Od'd$ is the land rent differential. Incidentally, the perpendicular line erected at d' , and intersecting DD' at P represents the equilibrium marginal "demand-price" for the product, and the price of the service-units of labor, capital and enterprise in the marginal product unit.

1. Demand Intensity

In the demand for land, one finds nothing essentially peculiar. As in the case of all factors of production, the demand for land is derived from the products, for which there are direct desires. The specific productivity of the land depends upon its natural capacities. It will be thought of by a business man as the total product secured in a given location, minus all expenses and charges, together with allowances for interest on investment, executive salaries, and perhaps profits—the economist's wages, interest, and profits, as defined in preceding chapters. According to the foregoing discussion, the economist would think of it as the total product of land, with the most productive proportion among the factors of production, which proportion carries with it the assumption that wages, interest, and profits are determined under competition along with the price of the product, and that at the marginal use of the land there is nothing left above such wages, interest, and profits.

In short, there is so little that is peculiar in the demand for land, that only one point requires brief mention; namely, that some land may be wanted for itself in a way that is not likely to arise in the case of capital goods or labor. Parks and residential grounds, for example, may be thought of as valuable for direct consumption. To this extent, such lands are logically separable from the bulk of land, which is used for productive purposes.

(1) *Different Land Uses.* One problem on the demand side pertains to the different uses to which land may be put. Despite much

natural specialization, many land areas may be used for different purposes, and may yield products which have widely different sorts of utility to man. There has thus arisen the doctrine of "alternative use" for land, which is merely one aspect of the doctrine of opportunity cost.⁸ Some economists hold that because a certain piece of land may be used to produce both peanuts and cotton, its rent is in some way determined by a different process than is the case with land which can produce only one of those products.⁹ Elsewhere, the author has gone into this matter at considerable length.¹⁰ Here it is necessary only briefly to classify the main uses of land in order that the scope of the problem may be fully grasped. These classes of land use are as follows:

I. Land for production:

1. Extractive industry—
 - a. Agriculture.
 - b. Forestry.
 - c. Minerals.
 - d. Fishing and hunting.
2. Water power.
3. Business sites—
 - a. Manufacturing.
 - b. Mercantile and financial.
 - c. Transport.

II. Land for consumption:

1. Residential.
2. Recreation and health.

(2) *Alternative Uses Not Determining.* The chief significance of such a classification of "land uses", lies in the light it throws upon the existence of separate demands for land. To the extent that these different uses represent separate demands, there is a separation among the markets for the various land areas which serve the different uses. Immediately, therefore, there may be separate margins for the several groups of lands, the rents within each group being measured from the particular group margin. Ultimately, however,

⁸ See pp. 265-6.

⁹ E.g., R. T. Bye, *Principles of Economics* (3rd ed.), p. 308.

¹⁰ See *Q.J.E.*, 1907, "Rent and Price; Alternative Use and Scarcity Value".

all the various land areas are interrelated in terms of value or net utility, which means that the costs of securing the different product from different land areas are involved. Neither utility alone, nor demand, can determine value, and it follows that when the product of land are objectively valued in markets, the separate significance of the different use of utility groups is lost; or perhaps it would be better to say that the different subjective values become homogeneous and interrelated through objective market values.

The fact is that "alternative uses", in a practical sense, depend upon prices; they are price-determined. The "opportunity cost" which may be felt by an individual cotton farmer when he figures that he could have made more money by planting his land with peanuts, represents a purely entrepreneurial point of view. The farmers' figures represent a balance between existing prices and expenses in the two alternative uses. These prices and expenses are taken for granted by the farmer; they have to be explained by the economist.

Another point to be made in this connection, is that those who set up separate land groups according to the kind of utility of the product, and who seek to treat these groups as having separate utility margins which play a significant part in rent determination thereby reach the conclusion that land rent enters into the determination of prices. It will be found, however, that they constantly shift their idea of products. At one time, they will be found to speak in terms of physical products, such as bushels of wheat and at other times in terms of the value of products. In the latter case, they assume a price to have been determined. Much confusion in this respect exists, as is well illustrated by T. N. Carver's discussion of rent in his work, *The Distribution of Wealth*. Not only the student, but also the trained economist, needs to be constantly on his guard to recognize such a shifting of position, and to avoid it in his own thinking.

2. Supply Intensity

(1) It is on the side of supply that we find the peculiarity of land appearing most clearly. The conditions determining the inter-

of the supply of land are very different from those which determine the supply of labor. Land is peculiar in that its supply schedule is, in the last analysis, not influenced by cost of production. Moreover, the expense incurred by an individual in acquiring land cannot be regarded as representing a payment for costs. Thus, at the margin of land utilization, the supply price of land-use is zero; but no such situation exists at the margin of utilization of labor or capital. Furthermore, in the supra-marginal uses of land, the supply prices depend upon what the traffic will bear, or upon the demand for the net product, without any dependence at all upon land costs.

To the extent that there is any analogy to cost, it lies in the fact that land is scarce by nature, so that its products are scarce, and, assuming some utility, are therefore bound to have some value. The natural scarcity of land doubtless plays some part in determining the attitudes and tendencies of those who have land uses for sale.

(2) In addition to natural scarcity, we find on the supply side of rent determination a factor of *subjective worth*. For example, if property rights be assumed, the owner of land, as an individual, is influenced by what he paid for the land when he bought it. This influence may affect him in his bargaining with another individual, who may desire to obtain units of land use by buying or renting that land. It will be noted, however, that in no case can the owner expect to get more for his land than is warranted by the value of the products attributable thereto, no matter how much he may have paid originally for that land.

Theoretically, more important as an item of subjective worth, is the individual's evaluation on the basis of what he estimates he himself might be able to get out of the land, either by utilizing it for the direct gratification of his own wants,¹¹ or by relying upon a demand for its products from other individuals. Since such an estimate of worth is not price-determined, this appears to be the only one of the items of subjective worth which has fundamental importance.

¹¹ Of course, the gratification is "indirect" to the extent that the land is used as an instrument of production.

(3) Finally, there is the item *holding power*. This plays some part in the determination of land rent and land value. One should be careful, however, not to apply the concept of holding power to cases involving the sale of land areas. We are not here concerned with the transfer prices of pieces of land, but with the valuation of the *use of land without regard to ownership*. Condemnation or sale of acres or lots is not involved, but only the value of crops, accessibility to market, etc. Probably the most obvious point under the head of holding power, is the fact that land is not perishable, and the closely related fact that land values are generally recognized as being more stable than the values of most other objects. Indeed, it is not difficult to find much land which is regarded as being a sort of savings bank, in the sense that the owner feels sure that in the course of a long period of time the value of his property will be enhanced through growth of population, higher standards of living, or what not. In many cases, too, there is no substitute for a given location or natural resource, and this condition may contribute to monopoly power.

It follows from the foregoing discussion that the supply price of "land-use" tends to be what the one who has such land-use for sale can get for it. One who possesses land may rent it; but *renting land is selling land use*. Thus the one who rents land is in the position of offering the services of a production good for sale; and a schedule of supply prices for land-use is thus readily visualized.

These supply prices, not being based upon costs, depend upon gross productivity of the land and the demand intensity for its services, as indicated by the curve dd' in the preceding figure. *The supply prices of land-use units depend upon the demand for the product, and the technological efficiency of the land* (say yield per acre), from which must be deducted the value of the number of power or efficiency units of the other factors of production which are required in the utilization of the land itself.

3. Supply Quantity

The concept of the supply of land as a physical quantity of an agent of production, is not difficult, but is rarely developed in eco-

conomic literature. We should first think of "land-efficiency units" per unit of product; that is, the quantity of land-service or land-use which is required for a unit of the product under a given set of conditions. It may be thought of as the units of matter and natural energy which enter into the product—the basis for the concept of elemental utility.

The idea may be grasped more objectively by thinking of it as a reciprocal of the product per unit of land area—the reciprocal of the number of bushels per acre, or of the volume of business per square foot of floor space. This idea of land-efficiency units leads to such concepts as the "elementary utility" of matter in its various forms, the various natural forces, and the "location" or accessibility which concerns saving in distance (perhaps "place utility"). In any case, these are the things which are poetically referred to as "gifts of nature".

This concept of land-efficiency units, which units are conditions prerequisite to the existence of the product, and which may be thought of as being embodied in the product, is necessary if economics is to be scientifically consistent. Only by this means, is it possible to correlate the value of the product with the rent, and thus with the value of the land.

4. Land Rent as the Value of Land-Efficiency Units

It now becomes necessary to introduce the idea of the value of these land-efficiency units: they derive their value from the excess of the value of the total product over the value of the services or efficiency units of the labor, capital, and enterprise which are jointly used in making that product. They are valued at the same time as the product units and the efficiency units of the other factors, and as a part of the same process.

The next step is to figure such valuable land-efficiency units per acre or per front foot, and thus to compute the rent for any unit of land area. In short, the full economic rent of a given area of land, is the total value of the units of land-efficiency required to make the products of that area when it is utilized most economically; that is, when a combination of more units of labor, capital and enterprise

with the same land would not result in an increase in the total value of the product which would more than equal the total value of those units.¹²

(1) *Graphical Demonstration.* At the risk of undue repetition, the following diagram is presented here in order that the relation between rent and the price of the products of land may be more clearly demonstrated.

As usual, the line DD' is the demand schedule for the product, say wheat; and the line SS' is the supply schedule, these schedules representing, respectively, a series of potential buyers' and sellers' bids and offers. PV is the price of the product. It is also the sum of the values of such power or efficiency units of labor, capital, and enterprise as enter into the production of a unit of the product.

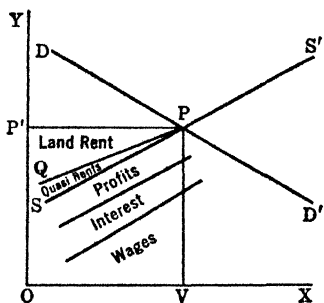


FIG. 29

More than that, it is the marginal expense of producing the product, which tends to equal the marginal cost; and of course, it represents the marginal demand price for a unit of the product, which tends to equal the marginal utility of such a unit. Along the line OX are measured units of the product, wheat, which "contain" labor units, capital units, enterprise units, and land units, the

latter consisting of matter and energy. (All these factor "units" are measured in terms of "power" or efficiency, in the sense of work done.) Along the line OY are measured values and costs. The area $OVPS$ is the sum of costs and expenses, no duplication being allowed. The area SPP' is the differential which results from selling OV product units at the price PP' . If we allow an area QPS for quasi-rents, we get the remainder area QPP' , which is the rent attributable to land.

It is most essential to note that at the margin of land utilization, V , the price of a unit of product barely covers costs and expenses.

¹² The value of the marginal efficiency-units or service-units of the factors of production tends to equal the marginal costs and expenses of those units.

It just rewards the cost-bearing factors of production. There is nothing left for land. This is the no-rent margin. It does not mean that one who utilizes the marginal unit of land does so at any loss, for his costs are covered, and he may get good wages, interest, and profits. Merely, he gets no rent. The other units of the product of land, however, are produced with less cost and expense, so that, the price being uniform, a widening differential appears, according to the ascending line SP.

(2) *The Margin of Land Utilization.* Before proceeding to a further demonstration of the determination of rent in a more definite way, it is desirable to clarify the position with reference to the land margin. This position is based upon the distinction between "marginal land" and "marginal land use". All too frequently in economics, there is talk of *marginal land*. This usually means any unit of land area which just pays the expenses of utilizing it, and which therefore yields no rent. Such a unit of land area is on the margin between utilization and non-utilization.

The *marginal use of land*, however, is a different concept. It is that point in the utilization of any land at which the marginal demand-price of the product approximates the marginal supply-price, and at which there is no addition to the differential available for the land. It is associated with the unit of investment on land which just pays, whether it be one of many units invested on very good land, or a single unit invested on very poor land. It is the least productive unit of investment which *tends* to be made on land. This margin of land utilization is the one that is significant in economic theory.

Perhaps there is no better way of demonstrating the truth of the foregoing statement, and its significance, than to point out that when we deal with the margin of land utilization as just defined, we have no difficulty with and little use for the distinction between intensive and extensive cultivation, a distinction which has been a bugaboo to students of economics for generations. The plain fact is that there is no economic difference between the intensive and the extensive margins. Both have in common the fact that they are margins of land utilization. They are the same margin, only in one

case we go downward, as it were, to find it, and in the other case we move outward. The margin of land utilization is everywhere; it is found underneath the Empire State building in New York City just as it is found on some poor farm in New England or in Western Kansas.

The demonstration of land rent as a differential measured from the margin of land utilization, now requires the presentation of the following simple quantitative diagram:

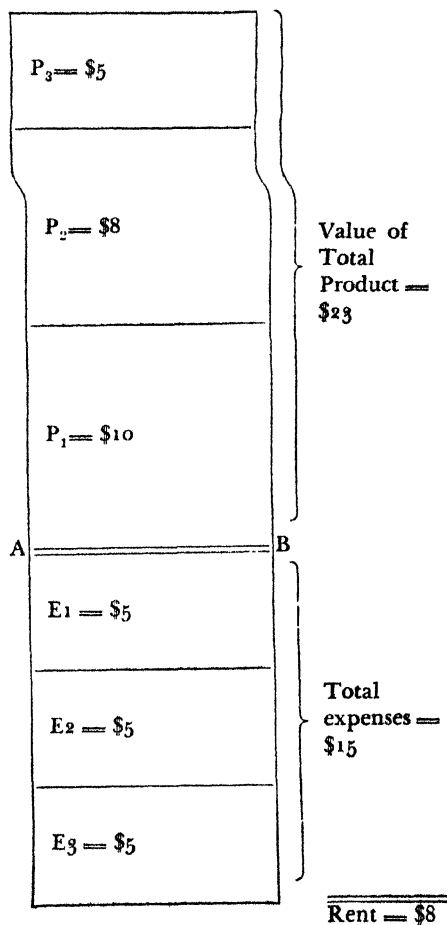


FIG. 30

The foregoing diagram is almost self-explanatory. A few descriptive words, however, are in place. The line AB represents any land unit. Upon this unit of land, three successive stages of utilization are assumed to be tried, each one involving the expenditure of \$5. The first expenditure of \$5 is marked E_1 , the second E_2 , and the third E_3 . The first expenditure results in a yield of products, P_1 , which sell for \$10, thus leaving \$5 as rent for the land. The second \$5 adds products which sell for \$8. The total expenditure at this point is \$10 and the total sales are \$18, thus leaving \$8 as rent. Finally, the third \$5 expenditure, P_3 , brings a yield which sells for only \$5. Since this expenditure just pays for itself, and any further expenditure may logically be assumed to be economically undesirable, there is no need to push the matter further. Thus we arrive at total sales of \$23 ($\$10 + \$8 + \5), made possible by an expenditure of \$15 ($\$5 + \$5 + \5). The difference, or the net return to the land, is \$8. This is the maximum net return. It is the land rent.

A consideration of the situation thus illustrated will convince one that land rent does not depend upon the existence of different grades of land, and that the phenomenon of land rent can be explained as simply and persuasively by a resort to the intensive margin alone, as by referring to extensive margins.

The foregoing diagram is based upon the assumption of equal units of expenditure resulting in different quantity yields, which yields sell at the same price. It will now be well to introduce a slightly more complicated presentation of the matter, which will allow for the common phenomenon that prices change, tending to rise as the demand for the product increases. Incidentally, we may introduce both extensive and intensive margins, so-called, though chiefly for the purpose of demonstrating again that they are economically one.

In the following diagram, it is assumed that the land area AB is divided into three equal areas which differ in productive efficiency, the last one to the right being the least productive. We then proceed, as in the preceding case, to assume increased production, the product being wheat. The first unit of expense, marked 1, is \$5. We

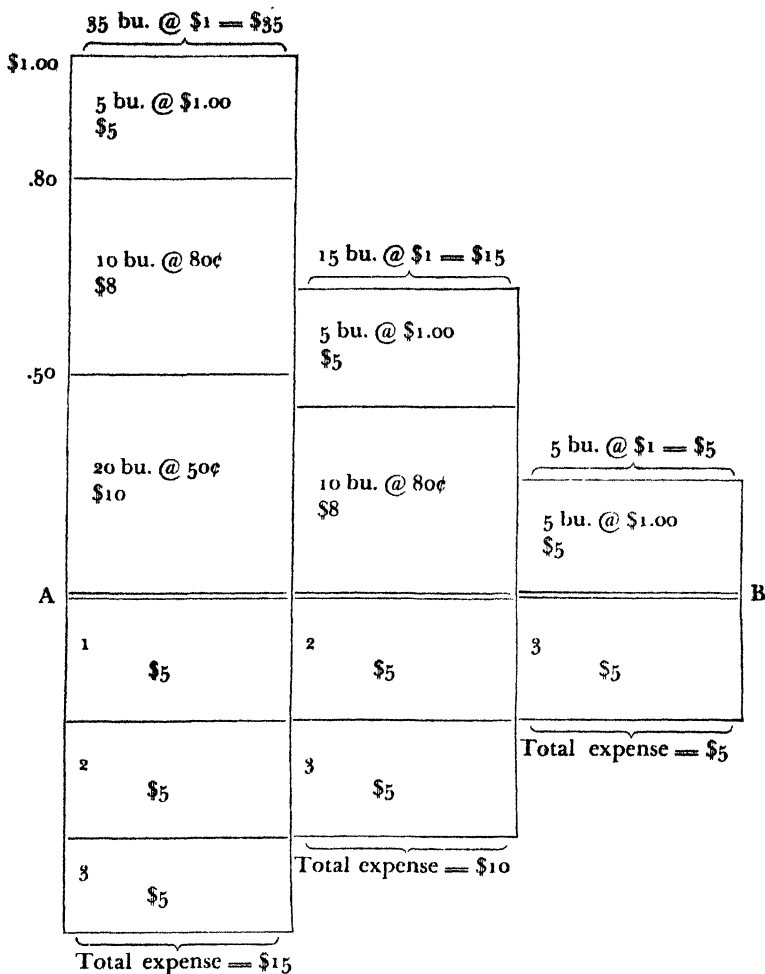


FIG. 31

employ it on the best land, the first of the three areas to the left, and find that it results in a yield of 20 bushels which sell for 50 cents per bushel, thus making the total return \$10. Subsequently, however, the price of wheat rises to 80 cents a bushel, perhaps on account of a growth in population. Then we not only apply the number 2 unit of expense upon the best land, but we also take up

a less efficient area, and incur expenses of \$5 thereon. This second unit of expense on the best land apparently results in a yield of 10 bushels, which at 80 cents per bushel makes \$8. It is to be noted, however, that we are now spending \$10 on the best land, and getting a total of 30 bushels, which, at 80 cents, make our total return \$24. Similarly, on the second best land, the expenditure of \$5 results in a yield of 10 bushels which, at 80 cents, makes \$8 worth of wheat. There would still be some tendency to increase the production of wheat without any further change in price, but let it be assumed that the price jumps now to \$1 per bushel. Then the following events occur. A third unit of expenditure is put upon the best land at the left of the diagram, which results in an additional yield of 5 bushels and, since these sell at \$1 per bushel, the additional expense is just covered. Fully as significant as this fact, however, is the fact that the best land now yields a total of 35 bushels ($20 + 10 + 5$). These all sell at the same price, \$1, so that the total value of the yield is \$35. The sales of \$35 exceed the total expenditure of \$15 by \$20, which differential is the land rent for land of the best grade. (This is presumably the maximum rent at a price of \$1.00 per bushel, since we may assume that additional expense will result in a less-than-proportional increase in income.)

At the same time that we incur the third expenditure of \$5 on the best grade of land, we find it worth while to incur a similar additional expense on the second-best land. This unit of expense, \$5, we also mark number 3, since it is of the same economic significance as the third unit expended on the best land. The result on the second-best land now is that with a total expenditure of \$10, we get 15 bushels of wheat which sell at \$1 per bushel, or \$15. Thus the difference or \$5 is the land rent for land of this grade.

Now comes the so-called extensive margin. As the price rises to \$1, and as the return on the first and second grades of land diminishes, our thoughts turn to possibilities of utilizing the inferior lands which still remain available. Thus we spend \$5 in utilizing the third grade of land and are rewarded by a yield of 5 bushels. These sell for \$1 per bushel, as does the wheat produced on the other grades of land, so that there is no rent on this land; merely

the labor, capital, and enterprise are rewarded, so that it is barely worth while to utilize this land.

The upshot of the matter is that the marginal utilization of all three grades of land occurs at approximately the same time and has exactly the same economic significance. The unit of expense marked number 3 is found on each grade of land, and in each case it results in 5 bushels of wheat, which of course sell at the same price.

D. Land Rent and Price

It was long an axiom in economics that rent does not enter into the determination of price. The Ricardian proof of this axiom is simple: First we note that the price of goods is determined at the margin of land use. We then introduce the statement that at the margin of land use, there is no rent. The conclusion follows that the price of goods therefore contains no rent; or, in other words, rent does not enter into the price.

It was not long after Ricardo's time, however, before certain economists began to argue that, in a sense, land rent may arise at the margin, or at least on marginal land, and thus may break the chain of logic by which the non-entry of rent into price was originally demonstrated. If there be rent at the margin, and if prices are determined at the margin, then of course there is rent in the price.

This attempt to overthrow the original Ricardian doctrine is based upon the doctrine of alternative use or opportunity cost. The reader who has followed the preceding discussion of these matters¹⁸ will therefore be prepared to discount the attempt. The notion, however, has been so persistent and is capable of such persuasive presentation that it seems worth while to deal with it again in its special relation to the rent problem.

To begin with, we note that the persuasiveness of the argument centers on the idea that the existence of alternative uses for land gives rise to "opportunity costs", which in turn lead to the shifting of land from one use to another, thus affecting the physical supply of the product and the price thereof. In order to clear up the con-

¹⁸ See above, pp. 264-8.

fusion, it is well first to note that there are, as it were, three supply "safety valves" in the market for any given commodity or service produced on land, as follows:

First, there is the so-called extensive margin. In the case of this safety valve, the alternative is abandonment of land use; the marginal land may be cultivated or not cultivated. This affects the total land supply and all uses. From the social point of view, it is an ultimate and absolute limit.

In the second place, there is the safety valve of the "intensive margin". Here the alternatives are more or less intensive degrees of utilization. Larger or smaller quantities of labor, capital, and enterprise, may be employed in the utilization of supra-marginal land, and the different possibilities in this respect are, in a sense, alternatives. Here, again, we find that all land is affected, all uses of land being involved. The reality of the differences exists, even when regarded from a strictly social point of view.

We come now to the third sort of safety valve, and that is what may be called the alternative-use margin, or margin of transference. In this case, the alternative lies not in an increase or decrease in the land supply as a whole, but in merely shifting a given piece of land from one qualitative use to another. Changes in this respect do not affect the total land supply, and affect only particular commodities. They concern a given use for a particular piece of land. They are determining only from the purely individual point of view, and their significance is only superficial and relative. By his superficial comparisons of alternative uses, the individual is led in the direction of making the most productive use of his land.

To develop the same general idea in another way, it will be noted that in the case of the first two safety valves, namely the extensive and the intensive margins of land use we are dealing with a no-rent condition. The total supply of land use is increased or decreased accordingly as the demand and supply conditions justify, the degree of utilization which "just pays" being the indicator. Such is not the case, however, with the alternative-use margin. Rent may exist in the alternative use, as well as in the use to which the land is put at any given time. Thus there may be a comparison

of the rents in the two uses. As already suggested, however, this merely tends to insure that, assuming existing prices and expenses, individual users will tend to utilize their lands in the most productive way.

Obviously, insofar as the supply-quantity of products depends upon such adjustments as are made at the margin of land utilization, whether extensive or intensive, the rent differential depends upon the price. The price of the product covers the cost of producing the units of supply which arise at the margin, and there is no rent earned at that margin.

Insofar, however, as the supply depends upon the transfer of given units of land from one use in which the rent is small, to another in which a larger rent may be earned, it seems to the individual producer that to forgo such a potential increase in rent, would constitute an opportunity cost, and that it affects his action and the supply of the product. If, for example, the cost of a product falls so that he could not earn rent by raising that product, but could get rent by shifting to an alternative product, he will tend to make that shift. Then it will seem to him that rent has been a factor in determining the supply, and thus the price.

This notion, however, will not bear analysis from the social point of view, for the following reasons:

(1) The land rent which the individual regards as an alternative, *depends upon* the use to which he puts his land. It is not a *cause* of that use. Given the figures, he really has no alternative: The land must be used according to the price situation, and after all, prices determine the alternatives.

(2) Economic land rent merely equals the difference between the price of the product and the expenses incurred in producing it. When the individual compares his alternatives, he is assuming the price of the product which he is producing, and the price of the materials and labor, which are his expenses. He is also assuming the price of the alternative product and the price of the materials and labor which will be required to produce it. Thus his whole alternative or opportunity is in reality price-determined.

(3) Contract land rent is not affected by fluctuations in alterna-

tive uses. The landlord will tend to ask as a rent for his land what it will earn on the basis of the general use of land, regardless of the more or less rapid changes in so-called opportunities.

(4) Not all land which yields rent has alternative uses; for soil, climate, location, and other special natural conditions may limit the use possibilities. Moreover, even where alternatives exist, the recourse to them will be limited by the exigencies of crop rotation and the like.

The result of this excursion into the theory that alternative uses allow land rent to enter into the determination of prices, is briefly this: *Fundamentally, and regarding society as a whole, the alternatives are price-determined, and therefore cannot determine the price.* The significance of the theory is that it serves as a useful bridge between individual and social action, since the individual acts *as if* he were governed by these price-determined alternatives. We thus are enabled to explain more fully how men are led, as if by an "unseen hand", so to act that their lands are fully utilized, and extensive and intensive margins come together at the margin of utilization.

E. Common Errors

Some of the more common mistakes in dealing with land rent are the following:

It is frequently assumed that land rent depends upon the differences among different pieces or areas of land, and that it would not exist without them. Land differentials, however, are due to differences in the utilization of land, and such differences are a sufficient explanation of different returns. Differences in utilization may occur on the same land. If all lands were the same, there would still be diminishing returns, leading to differential returns or land rent. It is true that the most obvious differentials are those which are due to differences among different land areas. That rent would exist if all land were equal, however, is readily demonstrable. If it be supposed that all the land in question is utilized, and that, with the gradual growth of population or increase in standards of living, the price of the products of land rises relatively to expenses,

the result will necessarily be a more intensive utilization of the land. But a more intensive utilization of land means diminishing returns from land, sooner or later. Part of the product may thus be thought of as having been produced at less expense per unit than other parts. A truer statement, however, is that it means differential returns per unit of cost or expense. Then the price must be high enough to cover the least productive expenditure, or the marginal unit of cost, required to produce the additional quantity of goods. The total product value, therefore, will be greater than the total cost, and the differential surplus is rent. It does not pay to push the utilization to the point where total expenses equal total sales.

Another common mistake is to accept the historical idea that first there arises a process of "extensive" utilization of land, according to which men take up first the lands that seem best, and then go on to use lands that seem poorer, until finally, land becomes scarce, and intensive utilization of it begins. The obvious fact, however, is that as soon as the "best" acre of land is used and increases in value, the tendency of the one who owns it will be to require a more intensive utilization. The intensive utilization of land develops at the same time and *pari passu* with extensive utilization.

Again, the mistake is often made of regarding rent as a payment which is made because land is scarce. But the economic "shares" are not payments, and they could exist if no payments were made. If one man or the state owned all land, and used it all, rent would exist. Or if the owners of land had its use rent free, rent would exist. It exists regardless of contracts. It exists whenever the gross return from the use of land exceeds the costs.

Finally, it is to be noted that differences among men are not a cause of economic rent. Differences among men may affect the rent actually earned by a piece of land, and also they may affect contract rent. Such differences do cause corresponding differences in wages and profits. Land rent, however, is attributable solely to the differentials which arise because of the diminishing returns from land.

F. *Land Rent as an Unearned Increment; the Single Tax*¹⁴

Back in 1879, Henry George with his famous work, *Progress and Poverty*, started the single tax movement, considered as an effective propaganda. To use his own words, he sought to abolish all taxation, save that upon land values. He said: "It is not necessary to confiscate land; it is only necessary to confiscate rent." The Single Tax, therefore, means two things: (1) to confiscate rent; (2) to abolish all taxes save one on rent.

There are three aspects of the single tax argument: the fiscal, the ethical, and the economic. Without going into detail, it may be stated that most economists agree that the Single Tax as a fiscal measure is inexpedient and inadequate. The ethical aspects of depriving the present owners of land of the value of their property

¹⁴The following section is taken with a little modification, from two essays by the author, one entitled "The Single Tax", found in a bulletin of the University of Texas called *Studies in the Land Problem in Texas* (1915); the other, "Report of the Tax Conference at the University of Oklahoma, December 8 and 9, 1914", *Bulletin of the University of Oklahoma*, New Series, No. 93 (Norman, Okla., 1915), pp. 81 ff., 104 ff. It is presented as an application of the theory of land rent, and as throwing additional light on certain points in the theory.

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need not be discussed here, and it is merely noted that the services of landowners have been and are so considerable that it is difficult to conclude that depriving them of the value of their property, as a general procedure, would be just. The following brief discussion primarily concerns the economics of the Single Tax, the main questions being, Is land rent an unearned increment? Is it expedient to confiscate such rent? The Single Tax has been put forward seriously as a cure-all for the major ills of society, particularly the economic ones, and it is in the light of such claims that it must be judged.

The first great error in the Single Taxer's case is his notion that private property in land is the cause of poverty. He attributes to private ownership what is due to a fundamental relation between population and land. Scientific economic analysis shows that, aside from the shortcomings of human individuals, the chief basis of poverty is the multiplication of population—especially among the least productively occupied—in a world in which the quantity of natural resources is limited. The fundamental fact is the fact of scarcity—a scarcity which exists no matter what the form of political and legal institutions. If population so presses upon limited land supply as to make food and clothes scarce and dear, can any juggling with ownership be the remedy?

But the single tax doctrine holds that it would make land freer, and so would multiply products and raise wages. It claims to give the laborer the alternative of taking up land, and points out the well known fact that when there was free land in the country, wages were high. But the cheap land of early days no longer exists. Land could formerly be secured at a capital value of \$1.25 an acre; but now the mere annual rent is several times that sum, and would be so whether paid to an individual owner or to the government as a tax. The capital needed to pay that rent (or tax) would be as great under the Single Tax as it is now. Let it be supposed that the rent of a given farm is \$1,000 a year, and that at 10 per cent the capital value of the farm is \$10,000. Under existing conditions, a man, if he be efficient and trustworthy, can borrow the purchase price (\$10,000), paying interest (\$1,000) on the sum. Under the Single Tax, would he be any better off in paying a \$1,000 tax to

the government? It must be remembered that, with the coming of a 120,000,000 population, the day of cheap land is forever gone: that today any capable man can get the use of all the land he can pay rent for; and that, as no government can make land, it is not going to mend matters merely to put the government in the position of landlord, and to call the rent a tax.

The Single Taxer may say that he is not opposed to land ownership, but to the *private receipt of rent*. Rising rents, he may admit, necessarily attend progress; but he claims that to allow the individuals to appropriate rents, leads to exploitation. The answer is that it does not follow, merely because a return is not "earned" by the person who receives it, that the return should be taken away from him and given to someone else. The amount of rent does not affect the amount of the other shares in Distribution (wages, interest and profits), and consequently increased rent cannot *cause* the impoverishment of labor. (1) Rent is the result of high prices, and depends upon (rather than causes) the difference between the price received for products and the expenses of wages and interest. As the demand for the products of land increases, the price of the land that yields these products increases. (2) That rent is not a cause of poverty, is made more clear when one thinks that rents may rise independently of any change in real wages. In fact, rent may rise because of high prices of the products of land, and wages may rise from the same cause; therefore wages and rent may keep pace with one another. (3) More than this, it would be wrong to assume that men must multiply up to the point at which so much land will be demanded that no one can have enough; for there is such a thing as the standard of living which, if sufficiently definite and reasonable, may keep population in check insofar as is necessary to enable all to receive earned shares of the products of land.

History will show any open-minded observer that poverty has existed when and where rents were not high; also that poverty has not increased *in proportion to* the increase in rents.

Indeed, the Single Tax doctrine exaggerates the peculiarity of rent. The rent of land is not the only important differential return which is in large part unearned. Such personal abilities as char-

acterize the "great" singer, actor, speaker and other individuals whose incomes depend upon the "personal equation", are gifts of nature, and the incomes therefrom are unearned in much the same sense as land income. Franchise values depend upon the character of the country and the people in a similar way, yet they are not land values.¹⁵

The only conditions under which any of the results claimed could exist for any considerable length of time, would be (1) a monopoly of capital (to restrict its amount), and (2) a strict limitation of population. But if population were strictly limited, under the existing or any other arrangement of taxation and landed property, there could be a great reduction in poverty. Scarce factors will always be valuable; abundant ones will always be relatively cheap.

Insurmountable difficulties would attend a transfer of land ownership or income to the government. In the first place, how are land and improvements in land to be separated? If such a separation is not made, the value of improvements will be confiscated along with land values, and the incentive to progress be dulled. It may be possible to distinguish the unearned element in the site value of city building lots and in mines; but, as has often been pointed out, agricultural lands have frequently been made productive by many years of saving and of labor. In such cases, we cannot find what part of the return is due to land and what to capital. Henry George himself wrote: "To improvements such an original title can be shown; but it is a title only to the improvements, and not to the land itself. If I clear a forest, drain a swamp, or fill a morass, all I can justly claim is the value given by these exertions." Then, as though recognizing the insuperable obstacles to drawing such a distinction in practice, he went on to say: "... the title to the improvements becomes blended with the title to the land; the individual right is lost in the common right." (This follows his statement that the greatest of all rights is the right of the individual to

¹⁵ The general recognition by single taxers that franchises ought to be taxed, and their attempt to confuse franchise values with land values, are quite illogical. Franchise values are *monopoly* values, like patents and copyrights. They are far in excess of the value of the lands used by those holding the franchises.

himself and to his own labor.) The Single Taxer apparently fails to see that the just title to the value of improvements on land, involves, in many cases, a title to the land itself. The difficulty to which this consideration gives rise, has not been satisfactorily solved.

Here the query may occur: Does the economist not admit that many improvements become incorporated in the land, and that the value of such improvements obeys the law of rent? There is no important error, insofar as theoretical analysis is concerned, in allowing permanent improvements to function as land. They are valued like land, and all costs and income are covered. *But this is a very different matter from confiscating such improvements.* When it comes to confiscating anything, exactness is required. And when it comes to confiscating any productive thing that man has made, distinctions cannot be lightly over-ridden, for future production is concerned.

The preceding point suggests a final criticism of the Single Tax, which is its failure to recognize adequately an *important connection which may exist between the value of land and an element of foresight and risk.* Sometimes, land values rise by chance, and without any contribution from human activity. Even in such cases, as already pointed out, it does not follow that no individual human being should be allowed to receive the increased value. But more than that, increases in land value sometimes are due to labor expended and risks run by individuals. Even natural resources have to be "opened up", and the opening up process is not always a success. This being true, it follows, first, that there is an earned element in enhanced land values, and that an injustice would be done by confiscating this element along with the unearned; and, second, that unless "pioneers" and all who seek gain by developing natural resources, are allowed the chance to profit by the gains in land values, the pioneering and developing of those resources will be retarded. It is a question whether we are so far along in the development of our physical environment that we can afford to take away the spur of private gain that comes from real land ownership.

A little reflection will convince a land owner that under existing

conditions the following costs and expenses, exclusive of taxes, have been or may be borne by him:

- (1) Purchase price, based on earning capacity of the land, *including a discounted future increment*.
- (2) Time, trouble and expense in purchasing and acquiring title.
- (3) Interest on the "investment".
- (4) Time and trouble of administering the property: maintenance of the land (e.g., fertilizers, filling washes, etc.); "representing" the land—paying taxes and assessments, defending title, preventing encroachment, etc.; (if rented, getting tenants, and collecting rent).
- (5) Time, trouble and expense in efforts to enhance the value: advertising; improvements *on* the land; improvements *around* the land; improvements *in* the land.
- (6) Interest on investment in improvements.
- (7) Risk of not realizing anticipated rise in value: increment not as great as anticipated; rise in burdens (taxes, cost of improvements, etc.); fall in value of money; rise in discount rate.
- (8) Time, trouble and expense of selling and conveying title.

It follows that before one can properly declare any unearned dividends on the land investment, one must deduct enough of any increment accruing, to cover any of the foregoing items which may apply. Time, trouble, risk, and expense are allowed for in other investments, and—unless we frankly give up the idea of private property in land—they must in justice be allowed for in investments in land. But, when these deductions are made, it is found that a considerable part of the increment to land value is generally "earned", using the term, earned, in the same sense that it is generally used in business. It is clear that a tax laid on this part of the increment would rest upon the present owner, and would constitute a discrimination against investors in land.

It does not follow, however, that there is no unearned increment, or no ground for special taxation. The unforeseeable increase in land values is sometimes great, for there is a considerable element of luck, conjuncture, or windfall—call it what one will. Unless it be a purely chance occurrence, as likely to be offset by loss as not, this element of the increment offers a basis of just taxation; for it is a case of peculiar ability to pay, based on special advantage. The course of land values so generally shows a relatively regular move-

ment with some continuous net gain, that we may be justified in singling out for special taxation any unearned land increments which actually exist. The conclusion is that, while not nearly so much of the increment of land values is unearned as is often imagined, some is, and this is a just ground for special increment taxation.

Speculation is a necessary feature of all business in which uncertainty and risk exist; and in what business are they not found? Where the market is wide, the volume of exchange is great, and the element of uncertainty is large, a wise division of labor gives rise to a specialized class of dealers who are called "speculators". So it is in dealing in grain, cotton, and land. The real estate speculator has the same function to perform as do other speculators, and, while he may abuse that function, he may render a valuable service. He may give information concerning opportunities to investors, thus opening up new resources and guiding the stream of investment. He may appraise values, seeing future potentialities and discounting them for present users. He often acts as a useful middle-man in making desirable areas accessible and available on convenient terms of payment.

The service of the land speculator is too often forgotten. Anyone who buys land and holds it for a rise, is a speculator. Laying aside questions of their risk, such persons may perform a real service to society by directing land to the most productive use. There are cases in which well situated lots are spoiled by poor shacks, uneconomic buildings, etc., and farm lands which ought to be broken into small intensively cultivated farms are given to slipshod, extensive cultivation. The land speculator often makes his money by seeing the best possibilities in land and hastening their utilization. In so doing, he may withhold the land from less productive uses. He may hold the land till it is ripe for the most productive use, which is often the most needed use. He may buy farms near cities, cutting them into lots and selling them on easy terms for residences; and in so doing, he often encourages the spreading out of cities in the most sanitary and beautiful direction—though in this some public supervision is desirable. He hastens the installation of irri-

gating plants, roads, silos, and fruit trees in our rural regions. Sometimes he makes money; sometimes he does not.

Of course, there are land misers and land gamblers; but rarely do we find them among the ranks of land speculators; for, like all true speculators, the latter gain only by using judgment concerning values. Among the worst ones are sometimes those farmers who hold more land than they can cultivate properly with the labor and capital at their disposal. These are land misers, not true farmers.

Above all, the economist should stress the importance of having a market in which *the value of land can be objectively determined by free exchange*. Any consistent application of Socialism would take away all such markets and substitute price fixing by political control; and the Single Taxer is, in this respect at least, a sort of land Socialist. If "the government" were the one great landlord, what assurance could we have that land would be used on the basis of its objective exchange value? Something of what is meant may be learned from the experience of the United States in opening up public lands. Few will deny that, on the whole, the farm land in such states as Texas has been inadequately used. Cultivation has been too extensive, in that not enough labor and capital are used per acre of land. This economic fact is to be associated with an over-rapid opening of our public lands on "easy terms" by the government, which has been a cause of the wasteful soil-skinning methods of American agriculture. In comparison with our available capital, too much land has been used, nearly free. Should we not go slow, then, in seeking to force all our lands on the market by a tax? Is it not the part of wisdom that land should be held for its full economic value, so that this great natural resource will be most economically used?

The speculator, then, insofar as he is honest and efficient, is to be regarded as the agency through which society sees to it that its lands tend to be used on the basis of their economic value. In this connection, too, it may be worth noting that speculators are not speculating for their health. Is it not substantially true that when there is any profit to be gained, intelligent speculators who hold

land tend either to sell the land or to rent it pending sale? And, when exchange is free, may we not assume that usually the largest profits are made by selling things such as land on the basis of their most productive use?

The reader must not conclude that the foregoing points lead to *laissez faire*, or no regulation. The objection is to unnecessary or unwise regulation only. We need not use so extreme and sweeping a measure as the Single Tax to reach certain social evils. Holdings of land in excess of a reasonable size are dangerous, and especially so in the hands of absentee landlords. In our cities, lots are sometimes held vacant beyond all reason. But these things are not the cause of all poverty, nor is the Single Tax needed to remedy them. For example, if it is the largeness of the holding, not the fact that it is land, which is the point, it is possible to tax, not all land, but all largeness—if unreasonable. This has been done with considerable success in various countries. Similarly, if it is absentee ownership we wish to get rid of,¹⁶ penalties may be imposed upon land held by absentees. Lots held vacant in congested parts of cities may be reached by eminent domain, or by a special tax. Inheritance, too, should be mentioned; and sometimes landed estates come down to idle and inefficient children. But, again, it is not the land nor property in land that is at fault here; it is the *inheritance* of the property. Accordingly, the remedy is to be sought not in a tax on ownership, but in a tax on inheritance—one, too, that would apply to all kinds of inherited property. In short, the causes of the land problem, insofar as they lie in social organization, are specific, and need specific remedies, remedies that go to the causes. There is no cure-all—no panacea. Insofar as the trouble lies in scarcity of land, it is to be remedied only by limiting population or improving production.

G. Summary

The key to an understanding of land rent, is found in the nature of "land". Thus a vital point in economic theory is to understand

¹⁶ Remembering that under the Single Tax the government would be the one great absentee owner.

the reasons why it is expedient to treat "land" as a distinct factor of production.

The essence of the concept of "land", as the term is used in economics, is limited quantity of natural resources (materials and energy) associated with any given area on the earth's surface. Thus, extension and location are the outstanding characteristics. Thus, too, land and land rent must always be measured with relation to space.

As a factor or agent of production,¹⁷ land conditions human activity and man's power to gratify his wants. It is to be thought of as functioning through "land-efficiency units", which constitute all the economic services rendered by land to man—standing room, accessibility, materials, and the like. These are all necessarily associated with some unit of area—are all "per acre", "per foot".

Thus one avoids the danger of losing the essence of land in the question-begging concept of a "fund of value". (Such a fund, which might embrace all sorts of goods other than land, can exist only *after* land rent has been determined, and has been capitalized.)

Land exists without cost. Capital and labor are often required to make it available, just as they are to manufacture some finished product. The contribution of *the land*, however, depends upon what is there—the location, content, and environment.

Thus the objective value of land can be explained only by first explaining its "rent", and then capitalizing that rent at some rate of interest (which also requires prior explanation.)

"Rent" is a differential return arising from the fact that different results in quantity of "land-efficiency units" are secured by applying equal quantities of man's productive energy to land. It is measured with relation to concrete units of land area, such as acres or square feet. (There are other differentials; but land rent is the most important and permanent one, since it expresses the great facts of limitations and differences in man's physical environment.)

It is to be noted that such a differential is *not* a mere residuum; that is, something which is left over after other shares are "paid", and which need not exist.

¹⁷ Land may also condition man's wants!

In fact, by applying the same logic of equilibrium which has been used in explaining the determination of wages, interest, and profits, economics explains rent as depending upon the value of land-efficiency units. This explanation goes back to the motivation of individuals. The individual, acting according to desire tendencies and subjective values, tends to apply labor, capital, and enterprise to land, as long as the products seem worth the cost. How much the differential or rent of any land area differs from that of others, tends to depend upon the land.

Thus we emphasize the concept of the *full economic rent*. This is the differential which arises on any land area when it is utilized in the most effective way with available labor, capital, and enterprise. The "normal" margin of land utilization is the result of an equilibrium of the economic forces which motivate most mature individuals.

Contractual rents, as they exist at any given time and place, are to be explained as *tending* toward the full economic rent.

In terms of causation and function, there is no essential difference between the so-called intensive and extensive land margins.

It follows from the fact that land rent is (by definition) a differential, that it is in a sense price-determined. (More correctly stated, it is the result of the same forces which determine the price of the product.) Therefore, rent does not enter into the determination of prices. In fact, there is no rent at the margin of equilibrium.

Finally, rent as a differential surplus¹⁸ is largely "unearned". Accordingly, it has often been proposed to confiscate land rent by taxation, and otherwise to abolish private property in land. The conclusion reached in the foregoing chapter is that such action is inexpedient as tending to destroy or impair economic motivation with reference to land use. There is a land problem with many phases, but it calls for more specific remedies.

¹⁸ Cf. above, p. 124f.

Chapter XIV

VALUE AND DISTRIBUTION: A SUMMARY RESTATEMENT¹

The reader is reminded that the opening chapter of this book points out so many differences in thought among economists as to the scope, definitions, and theories of economics, that there is some presumption that a reexamination of the postulates and bases of economics is needed. A thoroughly consistent synthesis is called for.

I

The position taken in this work is that economics has achieved the status of a science; and that the way to further development of economic science lies in greater knowledge of the phenomena with which it deals, more searching analysis and classification of those data, and more precise definition of its terms. To this end, it is especially important to rid economics of the elements of extreme materialism and individualism which affect the "classical" tendencies, while at the same time avoiding the extremes of idealism and societism which lie in most a-classical and radical thought.

On the one hand, therefore, a constant effort has been made to avoid the "entrepreneur point of view", which accepts expenses and opportunity-costs as ultimate data, and thus seeks to base economics upon price-determined demand schedules and supply schedules. Those who adopt this point of view regard Distribution as dealing with "payments made" by enterprisers, and cannot really explain profits.

On the other hand, economic value has been separated from other social values, such as ethical and political values, thus narrowing the scope of the science to man's relations to scarce goods. A nar-

¹ Cf. pp. 40-51 in the introductory chapter.

lower concept of "wealth" than many now hold, is deemed expedient for economic science. This procedure allows the economist to adopt consistently correlated concepts of Production, Distribution, and Consumption, which are based upon objective value. Value, as Fraser says, is not the whole of Economics; but Production and Consumption have to be correlated with Value, if they are to be parts of an economic science,—as Adam Smith knew when he limited his concept of wealth to "vendible commodities".

It is expedient to make the definition of wealth depend upon value, in order that economics may help man in adjusting himself to his limited environment—to scarce goods. This cannot be done by equal distribution of wealth (Communism), or by "social planning" and authority (Fascism), both of which divorce Distribution from Production and from objective value. Only the competitive process of the "price system" (Liberal democracy) is found to provide the sure bases: (1) an objective determination of the goods which are most desired, and of the individuals who desire them most, and (2) a motivation toward the maximum worth-while production.

Equal opportunity in production and exchange, appears to be the only non-coercive and non-arbitrary solution of the problems which arise from the fact that individual *men differ* in capacity to produce and to be motivated, and that *goods differ* in desirability and scarcity.

II

The basis of economic science is found in objective value—the generally recognized importance, or motivating power, of scarce goods.

In order to deal with such value scientifically, economists must be able to explain it, and accordingly, great importance attaches to the "primary values" (desires and subjective worths) and "secondary values" (subjective values) which are the bases of objective value. Thus the analysis of the desire tendencies which motivate human action with reference to scarce goods, is fundamental. It is the foundation for explaining the "forces" which "cause" economic activity.

These "forces" act upon and within individuals, who are the primary reality; but individuals exist in society. Society is a continuous association of individuals, based upon common interests; it represents the likenesses among different individuals! Economics, as a social science, deals with values from a social point of view, which means that it rejects anti-social acts, and considers the total net results in the long run.

Individualism is possible in scientific economic thought; but only when the individual is regarded as one who considers others, and recognizes the common interests of the group—recognizes, for example, that all must work and save and pay taxes.

Competition is a condition under which economic forces have substantially free play, so that objective values are definitely and accurately determined. It rests upon freedom of individual choice—freedom from coercion. Its main economic significance is that it expresses a tendency on the part of the typical mature individual to produce or sell all that he can at a profit. It has been assumed in this work that competition among business men, and mobility among laborers, *can* exist to an important or controlling extent; and that therefore it is worth while to develop economic theory upon that basis. The scientific economist need not assume that complete competition actually exists; but that it *can* exist. Then he may explain why it is the best condition for economic life,² and may thus contribute toward true reform.

Under the guidance of economic science, great progress can be made toward establishing rules for the game of economic life, which will make that game safer, more interesting, and more fruitful of general well-being, without destroying economic motivation or resorting to coercion.

III

In order that economic forces, and the results of competition, may be dealt with scientifically,³ measurement is necessary. Accordingly, much attention has been given to establishing a true concept

² I.e., most conducive to equilibrium between positive and negative desires.

³ That is, be explained, and be made the subject of laws or general statements as to tendency.

of economic quantity, and the requirements for measuring it. This leads to an emphasis of "wealth", which is defined as consisting of scarce goods having a relative importance that can be measured objectively. Hence the importance of transferability. Hence, too, the importance of the concept of homogeneous series (of goods) that have upper and lower limits, or "margins" of importance, which reflect the total situation affecting the value of a particular good.

Economics deals with the measurement of "means", and, to get objective measurability, depends upon exchange of objects; but it is to be remembered that means and their values can be understood only with reference to "ends"—in this case, human desires. This is one reason why so much attention must be given to explaining marginal utility and subjective value. It should constantly be recalled that "scarcity" is purely relative, and that the concept assumes the existence of wants and utility, without which nothing could be scarce.

Incidentally, the concept of "utility" is to be freed of hedonism, and is to be treated as desire intensity, not as pleasurable feeling.

IV

The general nature of value has been found to be relative importance of objects among which a choice is made. All value is relative, and depends upon choice made by an individual (subject) between or among objects. (Though the term, "absolute value" persists, it is really a misnomer, for it concerns cases in which there is no choice.)

Economic value is essentially different from other values, in that it not only rests directly upon individual tendencies and motivations, but also is concerned primarily with individual adjustments and survival. It is the only value of which it can be said that it is an individual survival value.

A more interesting, if not more essential characteristic, is that economic value can be readily objectified. It can be expressed quantitatively as a "price". Other forms of value must be inferred from individual action, and cannot be measured on any convenient scale of reference. Thus objective value, arising out of an automatic,

democratic process of individual choice, has, or can have, general recognition by the members of a group, and becomes a true social value.

In fact, to the extent that economic forces are involved, economic value represents the adjustment of conflicting motivations at a point where the conflict is at a minimum. Thus it may have something of the position of a "norm", such as is ordinarily ascribed, for example, to aesthetic and ethical values. In this thought, may lie the true significance of the economist's concept of "natural" or "normal" value.

In this connection, it is here maintained that rather than seek to "avoid" ethics, the economist should frankly face the real interrelation of economic and ethical values. (Thus alone, can he escape unreal abstraction, which makes his economics a game playable only in seclusion.) The way to deal with ethical, political and other values, is to understand their nature, and the line of demarcation between them and economic value (cf. pp. 194-208).

v

In order to be able to formulate laws, and to reason from cause to result, it is necessary to understand the forces which *cause* economic value. Any theory of determination which does not proceed in terms of causation, must ever be empirical and unfinal. Thus an attempt is made to trace the "genesis" of value from its psychological and technological roots. Although only the *results* can be observed and measured, it is possible to explain human motives, and to treat them as forces in the same sense that physics and chemistry deal with gravity, electricity, and atomic energy as forces. Although scientists do not see them, or measure them directly as such these physical forces have helped man to understand the universe.

Accordingly, the bases of objective economic value are found in primary demand and supply schedules. These are treated as representing "intensities" of demand and supply, caused by the desire tendencies and any other conditions which act upon potential buyers and sellers as motivating forces. Everything which affects the attitudes and tendencies of buyers and sellers of a scarce good, enters

into the "causation" of objective-economic value, and into the "determination" of its amount.

The data for demand and supply schedules, respectively, or the points in demand and supply "curves", are variously called bids and offers, demand-prices and supply-prices, and demand intensities and supply intensities. The point is that they are *subjective prices*, representing desires to buy or desires to sell (subjective worths and values), backed by the means and the will which lead to effective action through exchange. Demand and supply schedules thus represent the "field" of economic forces which play upon a given good, and tend toward an equilibrium of the main tendencies with reference to that good, which is objective value.

It has been especially emphasized that demand and supply, regarded as price-determining forces, are not quantities of goods. Supply *quantity*, for example, is measured by a simple enumeration of object-units. Supply *intensity*, however, is a measure of the tendency of sellers to sell. (In case production is involved on the seller's part, it is the measure of the importance to the producer of the resistances and pressures associated with each additional unit produced.)

VI

The subjective prices which make up primary demand and supply schedules, are usually expressed in terms of money. Usually, the purchasing-power element in demand and the "holding power" element in supply, are measured as individuals' tendencies toward money; and usually, bids and expense-costs are expressed in money. The value of money, therefore, cannot safely be assumed, as is the case when it is supposed either to have marginal utility, or to be a "claim" to the general assets of a state. Money must have objective value; since its essential function is to measure such values. Its value is to be explained only in relation to particular goods in particular markets. (There is no general value of money, except in the unreal and misleading sense of a "general price level" which is but an imperfect average of certain particular prices.) So understood, the value of money is determined at the same time that the value of the

objects which exchange for it, is determined. The peculiarities of demand and supply forces as they affect money, have been concisely analyzed (see pages 423-9).

In this connection, it is to be recalled that some economists accept a "price economics" (cf. page 471f). This usually means a business point of view, which starts by assuming the existence of value without explanation. Price economics takes prices, interest rates, and various contractual payments, as original data, and accordingly is good only on the assumption of private property and contract rights. It does not attempt to explain value, but professes to show the consequences of changes in existing prices and rates, usually by collective means. Thus it readily lends itself to schemes of state price-fixing and control over interest and wage rates.

In contrast, the position taken here is that, while there are different economic problems, there is but one science of economics, which must be based upon the *primary* "forces" of demand and supply which *cause* and determine values. It is held that, if economics *assumes* objective value, the economist must take prices for granted, and fails to deal with causes. He reasons in price-determined circles. Thus, when one holds that saving and investment are both *results* (instead of causes) of interest rates, one is led to assume a demand for funds which may not exist in reality, and to overlook important differences between the processes of saving and investment.

Finally, it is held that "price economics" does not allow for demand and other causal forces, and that it thus fails in practice. Unless we can understand and explain existing prices and rates, we cannot understand and explain modifications therein. What test or criterion of success in control does price economics afford? Would it make price stability synonymous with equilibrium?

VII

Among the great weaknesses which still persist in economic theory, are (1) the failure to correlate the value of producers' goods with the value of consumers' goods, and (2) the tacit acceptance of a circular logic with reference to the "purchasing power" element in effectual demand for goods. The former leads to a fatal gap

between the theory of Value and the theory of Distribution, and to much vague "imputation". The latter is associated with the equally fatal gap between (1) the theory of Value and Distribution, and (2) the theories of Production and Consumption. It leads to the unscientific "entrepreneur point of view", and largely explains the unsatisfactory record that economics has made in attempting a scientific explanation of Distribution.

An effort to correct these weaknesses, has resulted in a coordinated theory of Value and Distribution, as illustrated in the foregoing discussion of Wages, the approach being that of a determination of the value of labor power at the same time that the value of products is determined.

Distribution is treated as a phase of Value—the phase which involves the value of the productive "services" or "efficiency units" of the several factors or agents of production. Indeed, the value of products cannot be explained without explaining the value of producers' goods, any more than the value of producers' goods can be understood without understanding the value of their products.

From the demand intensity for any product, flows a demand-intensity for the factors required to bring that product into existence; so that, at the same time that the demand for the product is determined, the joint demand for the services of the several factors of production is determined.

This joint demand is distributed among the factors according to technological and economic conditions, as explained on pages 481-8, 534-8.

On the other hand, the factors of production are supplied by individuals, who provide their services with more or less difficulty. Generally, they have to be motivated to do so. The resistances which have to be overcome by the suppliers of products for sale, determine the supply schedule. In this connection, it has been explained in some detail how "negative desires" arise, and how these act as resistances by individuals to producing goods or to selling them when produced. These resistances are "disutility costs". They include the irksomeness of labor, the abstinence of saving, the risk of investment, the primary risk of business enterprise, and the like.

In explaining the Distributive "*shares*", such as wages and interest, these primary "disutility costs" are necessarily considered on the supply side. And, in explaining the value of *finished goods*, the primary positive desires of consumers are necessarily considered on the demand side. These are the bases, respectively, for primary supply schedules and primary demand schedules. Then when the joint determination of the value of products *and* factors of production (consumers' goods and producers' goods) is considered, two interrelated results occur *at the same time*: (1) the demand for the product explains the demand for the factors, and translates some disutility-costs into expense-costs; (2) the disutility-costs of the factors of production explain the supply (intensity) of the product, and translate subjective prices (bids) into objective values of products.⁴ (At this point it may be well to consult the diagrams on pages 479, 481, and 484.)

It is considered expedient, on the whole, to analyze Production and Distribution according to the four "factors", labor, capital, enterprise, and land.⁵ These "producers' goods" are supplied by individuals, thought of as forming functional groups, whose incomes or "shares" are the subject of Distribution. It is highly important to deal with the total or gross income, not avoiding the problems of maintenance, subsistence, and replacement, by assuming a "stationary state" and the existence of a certain "net" income (see p. 447f.).

The total gross "shares" are built up by determining the values of service-units or efficiency-units which result from the performance of the several productive agents. (Thus it is possible to correlate units of product with units of productive agents.) Equilibrium theory requires that the "normal" Distributive share be one based upon the most productive proportion among the factors of production which is really possible. This is complete equilibrium. Then the shares actually received at a given time, with less productive

⁴ The business man says that costs have to be covered; but the economist may better say that in an exchange economy prices have to be paid if costs are to be incurred. (Prices involve objective values.)

⁵ These are essentially distinct, but probably require breaking down into sub-classes.

proportions, are explained in terms of "forces" which tend toward complete equilibrium.

VIII

In conclusion, it may be well to epitomize the general position which has been found essential to a scientific explanation of objective values:

(1) The theory must always be in terms of causal forces, explained in terms of human motivation and technological conditions.

(2) It must always deal jointly with the problem of determining the values of both producers' goods and consumers' goods, in order to attain a non-circular equilibrium between primary marginal utilities and disutility-costs.

(3) It must always consider these causal forces as tending toward equilibrium, which is the only scientific basis for a concept of "normal".

(4) It must always deal with equilibrium as a simultaneously determined condition, the values of costs and utilities (producer and consumer goods) being determined jointly. (This is not simultaneous in the Walrasian sense; but in the sense that common and interrelated causes make necessary a joint treatment in order to avoid partial, and therefore circular, explanations.)

(5) Accordingly, the theory must always deal with conditions at a given time—now, and now, and now. Thus it allows for change, while remaining positive.

(6) It must always begin with the assumption of competition in a system of division of labor and exchange, regarding competition among sellers as a tendency to sell all one can at a profit (not to maximize profit).

(7) Finally, economics must always regard the individual as primary, but also must regard him as motivated according to a social point of view.

(8) And the economist must always recognize the reality of ideals, while also recognizing the reality of the material, and the limitations which it imposes upon the ideals of man—somewhat more narrowly upon unorganized individuals than upon men co-operating voluntarily in competitive social groups.

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